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ALLERGY IN SKIN DISEASES*

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When Richet, whose talents were subsidized by the winnings of a Mediterranean gambler instead of by the sanctified swag of a field marshal of industry, discovered the nature of anaphylaxis, he started medical imagination on another flight into the hectic realms of hit or miss. The phenomenon he discovered was definite. It meant something, and still does. But the lily has been gilded by countless clumsy brushes, and the ultimate daub is allergy, God save the mark, as interpreted and applied today. The metaphores in this paragraph have been mixed intentionally in order to symbolize how confused a simple thing can become when the human mind strikes its stride. For a moment I shall travel backward the path of medical history, and note the sign posts: first, a philosophy based on the humors which colored etiologic concepts until the middle ages; then, the great intellectual jolt by Harvey, a reveillé that bounced Galenism out of its ancestral coma; thereafter, a scramble of ideas, preeminently the doctrine of diathesis, gouty in England, dartrous in France; another jolt, Pasteur; another, Virchow; another, Ehrlich. Parasites, cell pathology, immunity! Is it remarkable that the medical world went crazy? And then Richet.

And in the train of all these, first a germ for every illness; then a cell change for every nuance of illness; then an antibody in no man's land attempting a truce between the parasite and the cell, to the ultimate victory of health; then a catchpenny word, catchpenny because a great idea, that of anaphylaxis, was Kiwanised out of all recognition by the Rotarian minded in a world-wide Gopher Prairie, while the instructed could only sit back in stunned contemplation. But a bit of optimism arose in them as they mused with Villon, "Where are the snows of yester year?"

And these snows, what are they? Humoral pathology in all its classic ingenuousness, the miasma, the mesmeric moon, allopathy, homeopathy, the spleen, black bile, yellow bile, dark blood, phlegm, the diathesis, malaria, idiosyncrasy, susceptibility and hypersusceptibility, all once were dignified in speculative etiology. Where are they today?

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And tomorrow, where will be focal infections, where, allergy? "Non omnis moriar," sang Horace, nor will these entirely die, but when they have survived the purgatory of misconstruction, their lambent spirits, resurrected, will lead medicine onward after the fools and opportunists have had their fling. For in all of these there is some essential truth, some motive that propels the growth of knowledge, and not least of all is allergy.

What is this allergy? Allergy is a phenomenon of tissue response to certain toxins, originally construed as applying only to alien proteins not normally toxic, until they have sensitized the tissues of peculiar persons. It was to tissue or, better, to cells, what anaphylaxis was to the entire body. It was thus, at first, a restricted concept, a kind of idiosyncrasy, as it were, explaining local susceptibility or, perhaps better, local hypersusceptibility. Its logical content was less than that of idiosyncrasy, for idiosyncrasy merely designated the observation that one man's meat was another man's poison, and allergy simply designated one mechanism by which this was brought about with reference to alien proteins. Now the word atopy has supplanted the word idiosyncrasy and perhaps the substitution may be heralded as a gigantic intellectual display.

What the word atopy really signifies, however, is intellectual embarrassment. As study and observation increased it was found that allergy explained too little; that tissue responses to nonproteins and to proteins were indistinguishable so far, at least, as concerned the appearance of resulting lesions. This is more important in dermatoses than in other diseases, since the gross aspect of skin lesions forms the clinical basis of dermatology. A notable example would be the urticarial wheal which can be provoked by countless substances in unrelated groups. Nor can what caused it ever be discerned in the way a wheal looks. Next to ordinary erythema the wheal is the simplest form of skin response, followed in third place by the vesicle of simple dermatitis or eczema. What holds true of the wheal is also true of erythema and the vesicle.

Allergy might continue to be used as a term describing hypersuceptibility to proteins and atopy a term describing hypersusceptibility to a wider group of agents. If this is an improvement over the concept of idiosyncrasy to clams, or toxicodentric-acid, or primrose or lobster or anything else, it is difficult to see just why, except in one respect. That respect is that for purposes of pure science a precise definition is desirable. The issue to be discussed in this paper is the application of the concept of allergy in a clinical manner. It would be impossible to quarrel with an investigator who, in classifying observations, designated one group as allergic, another as nonallergic, and so on, but it challenges intelligence when a clinician uses the term as part of a diagnostic appel-

lation—for example, allergic dermatitis. Atopic dermatitis or idiosyncratic dermatitis, would be as sensible and as gratuitous.

A proper clinical designation consists of a noun identifying a disease according to accepted diagnostic standards, as dermatitis and pemphigus, followed by descriptive adjectives, as dermatitis vesiculosa and pemphigus foliaceus, but none should be appended that involve etiologic speculation. Thus, even the expression dermatitis venenata is illicit in diagnostic usage. But, having established the fact that the dermatitis is due to an identified poison, the designation dermatitis medicamentosa, and, in parentheses, the particular drug, would be permissible. To call the condition dermatitis medicamentosa, however, without first establishing the fact with reasonable certainty, is irrational. To use the term dermatitis allergica, or some similar characterization, without reasonable proof of its correctness, is a similar breach. Yet this is what is being done. Nor is the transgression only against logic; it is likewise a moral and ethical one in the sense that it is founded on accepting an unsupported belief, perilous since it predisposes to intellectual obliquity.

Physicians aim to relieve the sick. This cannot be done if they jump at conclusions and play hunches like common gamblers. To decide circumstantially on the nature of disease is nothing more than playing roulette with the chances of success residing in the spin of the wheel. If nothing more than this were required of physicians, sound medical training and licensing of practitioners would be superfluous. To relieve the sick it is necessary to ascertain everything demonstrable about the cause of a given illness. This requires openness of mind, and if prejudiced opinions are formed, the mental eye is closed; salient points are missed, the object of medical practice is defeated. The phenomenon just described is that of the snap diagnosis. The psychology of such diagnosticians is complex. The most generous interpretation of it would be hurry. The more likely explanation is the desire for effect, stupidity or lack of scientific understanding.

What stimulated the foregoing reflections was an utterance heard by myself at a meeting of dermatologists. A patient had been presented who had generalized, chronic, scaling and vesicular dermatitis or eczema, with certain common consecutive lesions. The eruption had been singularly obstinate. The physician in charge was baffled as to both the explanation and the treatment of the disease. Unhesitatingly, and after a masterful, appraising but notably casual glance, some one pronounced the case an example of allergic dermatitis. There is something enviable concerning both penetrating vision and guileless self assurance, but how it was possible so cursorily to decide that a case of eczema that looked like hundreds of other cases of eczema, could ocularly be stamped allergic is a bit of intuition that to more laborious thinkers seems specious. And specious it was; and specious this sort of gymnastics will remain.

He did not know that justification for his opinion required proof. He simply guessed that an obscure case could be best docketed in the pigeon hole of allergy, this being the crest, so to speak, of the allergic wave. Ten years ago he would as glibly have elected focal infections, and five years ago an endocrine disturbance for his ukase, and just as thoughtlessly. What he will do tomorrow when the shadow of allergy has left the shallow dial of his mind, will depend on what scientists are emphasizing and practitioners happen to be proclaiming. After all, his philosophic error depended on three forms of ignorance; ignorance of logic, biology and practical medicine. Aside from the fact that the older and more seasoned men with whom he is associated, and who should know better than to permit so blundering a form of thought to flourish in their institution, the reason for this sort of intellectual joy ride lies in the recent emphasis given the subject of allergy in cutaneous diseases.

Serious studies by Bruno Bloch, temperate, rational and constrained, indicate that the phenomenon explains both dermatitis, in the sense of eczema, and uticaria. Assuming that something is gained by substituting the word allergy for hypersusceptibility in this connection, Bloch's work seems noteworthy enough. It is questionable whether this change of terms in itself enhances Bloch's contribution to the knowledge of dermatitis, or indeed, whether he himself regards it as so important since he knows what allergy means. Moreover, it would be astonishing to hear him use the expression "allergic dermatitis" except in its biologic significance or in speaking loosely, but certainly never in a serious clinical connection at an open meeting. Nor would any one else who respected cleancut concepts do so.

It is by no means established that hypersusceptibility determining dermatitis is allergy in the pure sense, namely, that of sensitization to ordinarily harmless proteins. It may be this, but it may as well be another form of sensitization, an insignificant matter as to the tissue effect, but significant with respect to biology. It is not a point that can be settled, if at all, without painstaking investigation in a given instance. Its vagueness should alone suffice to prevent the use of the word allergic in a descriptive clinical manner.

Moreover, during the past fifteen years, the burden of several of my papers on this theme has been that dermatitis and eczema are identical, and represent the interplay between a precipitant and a receptive skin, irrespective of the source of the precipitant, and the factors conditioning the skin's responsiveness. I gave the hypothetic phenomenon no name, for none appealed to my logic. Allergy would certainly explain one group of cases. In any event to proclaim the fact of such sensitization with any flare of pedantry seemed to me to contribute nothing to knowledge, and to be distinctly risky in the way it has proved too risky to employ allergy. Of course, dermatitis could not occur in unpredisposed

tissue; neither could any other inflammation. To single allergy out as the most likely explanation appeared to me unwarranted, nor have I had reason since to change my opinion.

Neither does the fact that I have employed cutaneous and percutaneous tests in my studies, as Bloch also did, and both of us independently, color the fact that I do not always, or even often, find these tests of value. In lieu of something better, I use them, but I attach no importance to negative results, and only qualified importance to positive ones. Furthermore, I believe that the factors conditioning the tests are not yet clear. They are most convincing when one applies a suspected agent to the uninjured skin, as Markley did in his patient with guinea-pig dermatitis. Excoriating or puncturing it first introduces, it seems to me, an artificial element that detracts from conclusiveness. Thus, although I am sure that allergy plays a rôle in many cases of dermatitis, I think other types of susceptibility play a numerically greater one. Whether an eruption is due to the allergic or to another variety of susceptibility, the ultimate proof lies not in a presumptive positive test, but in the spontaneous disappearance of the eruption after the suspected agent is removed from the environment. The rigorousness of such a proof is perhaps too great to expect in ordinary practice, but short of something approximating it there can be no unequivocal assumption of the true nature of a suspected case. And in view of this the clinical concept of "allergic dermatitis" is that much more absurd, that much less permissible.

Careful attention to the papers read by Bloch and Klauder at the last session of the American Dermatological Association would have indicated that though allergy determines one type of dermatitis, it is no blanket explanation for the syndrome. Nothing was intimated by either author that the word has a clinical connotation. On the contrary, two honorable dicta were not ignored. One is the French aphorism, "there is no eczema, only those who are eczematous." The other, also French, is Besnier's doctrine of skin reactibility, namely, that a single agent may provoke many dermatoses, as the bromides; and, conversely, that numerous agents may produce the same picture, as urticaria and eczema. What the first means is that there are persons predisposed to eczema, the excitant being a matter of indifference. Both Bloch and I have verified this from experience and by experiment. The second signifies that cutaneous responses are restricted and, for the most part, common lesions result as the vesicle and wheal.

This being so, to talk of allergic dermatitis is clinically unsound, because allergic looks like any other dermatitis, and a differentiation is impossible clinically, but awaits laboratory support. What *a priori* would be called allergic dermatitis hence might be any other kind, dermatitis venenata, dermatitis due to a metabolic disturbance, or to tinea,

and so on infinitely. Nor can the determining cause be ascertained without penetrating study, and then not invariably, clearly proving that the etiology is of more varieties than the present methods of investigation are adequate to reveal. In short, dermatitis due to cell sensitization is one restricted etiologic group, clinically indistinguishable from other types. This is the real reductio ad absurdum, and the burden of proof is therewith passed back to the allergic dermatologists who have been captivated by a concept, the loose application of which demonstrates only their own ignorance of essentials. The same is true with reference to urticaria.

But no dermatitis or urticaria can exist in a skin not susceptible to dermatitis or urticaria, irrespective of whether the provocative agent is physical or chemical, or of infectious, metabolic, exogenous or endogenous derivation; or whether due to trophic, endocrine or biochemical disturbances. In short, for some reason, the patient's skin, to borrow from the vernacular, is funny that way. This queerness of the skin may be called by any name—allergy, atopy, idiosyncrasy, susceptibility, hypersusceptibility—and bespeaks either sensitization in the true sense of allergy, or congenital predisposition which is not true allergy, but is in effect just like it. Allergy is an antigen antibody reaction producing necrocytosis, or at least disease of the cell. Who can prove by present methods that idiosyncrasy is essentially different? Who really adds to enlightenment by inexpertly using words?

Furthermore, it must be recalled that at least all inflammations, including infections, due to any possible type of chemical, physical or parasitic agent, must have one thing in common, a precipitating cause acting on responsive skin. In that sense if dermatitis is allergic, so are all other inflammations of the skin, as psoriasis, the lichens, the exfoliative dermatoses and all the rest. Or if dermatitis is due to atopy, so are these. In like manner, the same is true if dermatitis is only the expression of idiosyncrasy. Thus, the concept of allergy, as well as the other concepts mentioned, proves too much or too little, and the words in question, except to the pure scientist, and particularly used as clinical adjectives, confuse rather than clarify the issue. Therefore, they have no clinical utility.

But the clinician should, nevertheless, employ every strategy, including that of such limited allergic tests, or kindred ones as are available, to explain his cases. Bloch, therefore, in pointing out the phenomenon in relation to dermatology, has rendered an intellectual service in that he has stimulated investigation. Yet this may become an ominous disservice if the term allergy, as currently used, lulls the practicing dermatologist into intellectual supineness through the ancient mechanism of substituting a word for thought. If he becomes obsessed with a glib bit of nonsense he will not think beyond it, and this appears to be precisely what has occurred.

Allergy, then, may justly be regarded as an explanation for one type of simple dermatitis. But it is only an explanation. In the broad sense of atopy all types of dermatitis are explained. In clinical dermatology these concepts are inadmissible. The same phenomena explain all other inflammatory dermatoses. Thus, emphasizing allergy in cutaneous medicine restates only the obvious fact that for a tissue to present a lesion it must be peculiar in the respect that it can present such a lesion. If this is true the entire concept becomes trite. If it is trite it has no intellectual value, and this being the case it is nothing but a pedantic absurdity. Thus, allergy or atopy as explaining the nature of skin diseases, expressing, as they do, only a self evident fact, become a scientific toy, and clinically only utter nonsense. It is recommended, therefore, that these words be used with consummate constraint and never in clinical terminology.

THE ABSORPTION OF SULPHUR COMPOUNDS DURING TREATMENT BY SULPHUR BATHS*

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The use of sulphur and of certain of its compounds in the form of baths is so frequently recommended by nonmedical men, by charlatans and by faddists that the reputation of sulphur baths has suffered. That sulphur and compounds of sulphur as they occur in natural waters and also in artificial sulphur baths do have a beneficial effect when combined with other types of treatment for skin diseases, especially those of the acneform or pustular types, is undoubted. Sulphur is an important drug in the armamentarium of the dermatologist, and its methods of therapeutic employment are varied. However, a search of the literature has revealed a paucity of scientific explanations as to the reasons for its efficacy.

The history of balneology is extremely interesting. We shall not go into the details in this paper, but shall refer our readers to Llewellyn's [1] comprehensive article on the subject.

With the idea of beginning a preliminary study of the reasons for the efficacy of sulphur in the form of baths, it was decided to determine whether or not there is absorption of sulphur compounds by the blood stream. If absorption does occur, the question arises as to where absorption takes place, the effect of the type of compound of sulphur present in the water used for baths on the rate of its absorption and whether or not there is any relationship between the therapeutic results obtained, the type of sulphur compound used and the concentration of sulphur in the blood stream.

The problem presented, then, was to determine the total concentration of sulphur in the blood stream and the total amount of sulphur excreted in the urine of a group of patients who presented various pathologic conditions of the skin and to whom a therapeutic regimen which included

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1. Llewellyn, L. J.: The History of Bathing, M. J. & Rec. **119**:406, 1924; **120**:77, 1924.

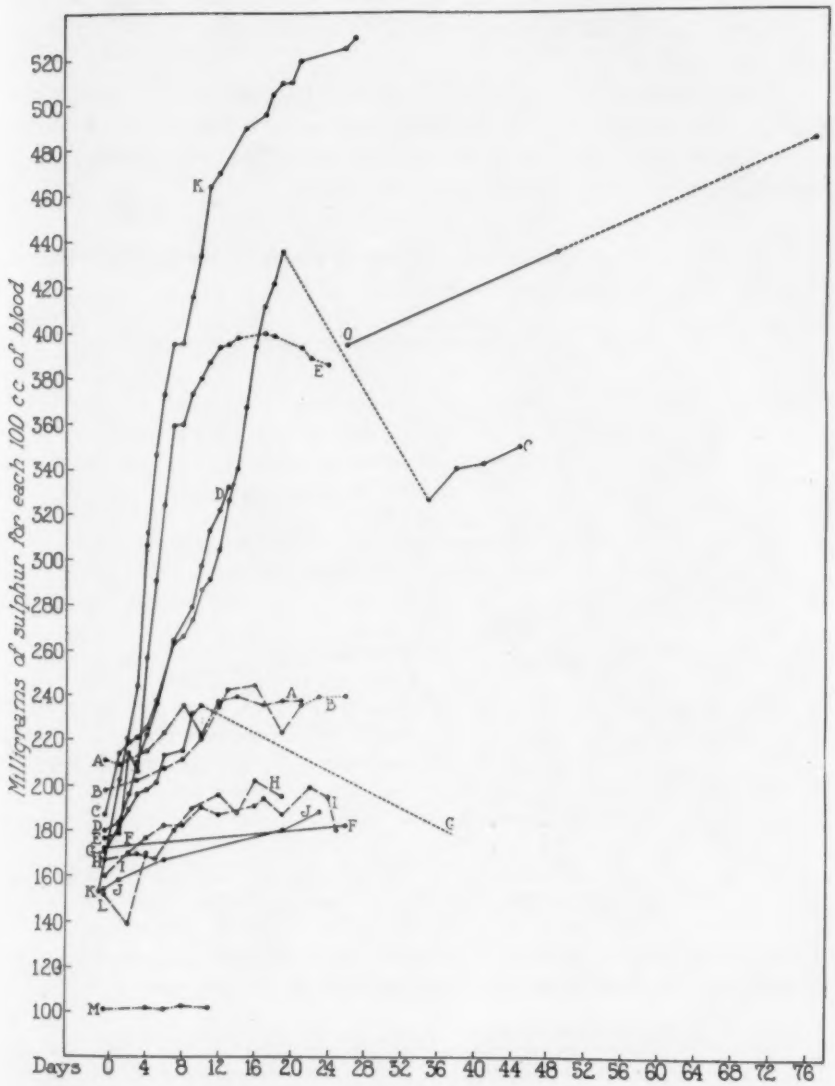

Chart 1.—Cases in which type 1 baths were given and control cases. Graphic representation of variations in concentration of sulphur in the blood as treatment progressed. The circle-dash-dot line indicates a control patient receiving a diet known to contain sulphur (the condition in case M was complicated by the administration of sulpharsphenamine). The circle-dash line indicates a patient who received a daily sulphur bath and who wore a respiration mask. The amount of sulphur in the diet was normal but of known amount. The solid line broken by circles indicates a patient receiving a daily sulphur bath without wearing a respiration mask. The diet was normal. The broken line indicates a discontinuation of the sulphur baths.

some form of sulphur baths had been given. It was decided to determine only the variations in total sulphur content in this study, reserving for future work the determination of the variations in the different types of sulphur.

The baths were given daily over periods that are evident in charts 1 and 2. The studies of the blood and urine were made daily with the exception of one group, in which studies of the blood were made semiweekly.

METHOD

The total amount of sulphur was determined gravimetrically in whole oxalated blood by fusion in a Parr bomb as follows:

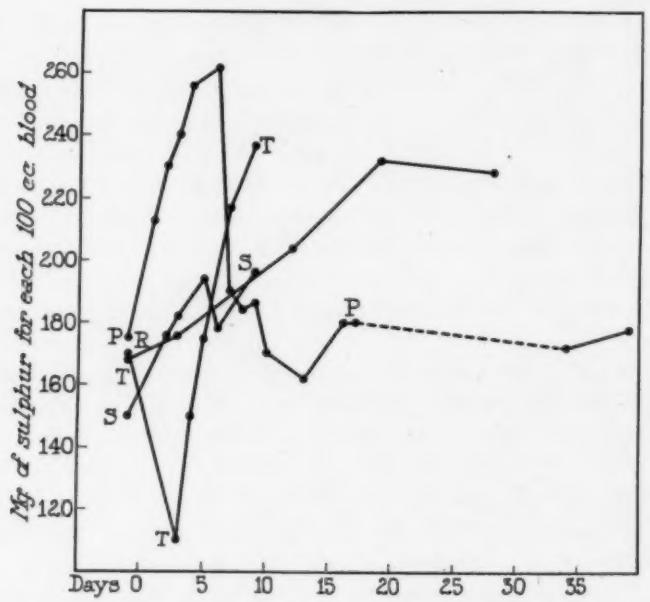

Chart 2.—Cases in which type 3 baths (colloidal sulphur) were given. The graphic representation is similar to that in chart 1.

Five cubic centimeters of whole, oxalated blood was pipetted into a 50 cc. tarred Pyrex glass beaker, and the blood was dried by heating in an oven at 100 C. for several hours. The beaker was then reweighed, and the difference in weights was taken as the dry weight of 5 cc. of blood. The dry material was ground to a fine powder in a mortar, and 40 per cent of the weight, which corresponds to 2 cc. of whole blood, was used as a sample. This sample was mixed in the cup of a Parr sulphur bomb with approximately 15 Gm. of sodium peroxide and 1 Gm. of potassium chlorate. This mixture was fused in the regular manner by electrical ignition. The fusion mixture was dissolved in about 300 cc. of water, excess hydrochloric acid was added, and the solution was evaporated to dryness on a steam bath. The residue was taken up in approximately 250 cc. of water, was heated, and the solution was filtered quantitatively. To the filtrate was added 20 cc. of 1:1 hydrochloric acid, and 10 cc. of tenth-normal sulphuric

acid; the solution was heated to boiling, and while it was hot 10 cc. of 10 per cent barium chloride was added. The barium sulphate was allowed to precipitate from the hot solution; it was filtered through a tarred Gooch crucible and was weighed. Blank determinations were made on 10 cc. of tenth-normal sulphuric acid, and this weight was subtracted from the weight of barium sulphate obtained from the samples of blood. This determination was made according to the procedure suggested by Stockholm and Koch[2] and serves to give a much larger sample of barium sulphate for weighing.

Total sulphur in the urine was determined by the Denis modification of the Benedict method.[3]

Three types of baths were employed:

The type 1 bath was prepared by adding to a 30 gallon tub of water, maintained at body temperature, a mixture of 60 Gm. of precipitated sulphur, 30 Gm. of sodium hyposulphite, 15 cc. of dilute sulphuric acid and 400 cc. of water.

The type 2 bath was identical with type 1. However, in order that the absorption of sulphur dioxide might be eliminated by the respiratory tract, the patients given this type of bath wore respiration gas masks, the inlet and outlet tubes of which projected through an aperture in the window.

The type 3 bath was prepared with the aim of eliminating sulphur dioxide and sodium sulphate as factors in the absorption of compounds of sulphur. An easily peptizable form of colloidal sulphur was added to the bath water. A quantity of this form of sulphur sufficient for ten baths was prepared as follows: 300 Gm. of sodium hyposulphite dissolved in 300 cc. of water was added to 1,000 cc. of 50 per cent sulphuric acid contained in a 3 liter balloon flask at room temperature. Through a rubber stopper with two holes was placed an outlet tube connected to the water suction apparatus and a small capillary tube. Suction was applied and the flask shaken as the reaction proceeded and the sulphur precipitated. To insure completion of reaction and removal of sulphur dioxide, the flask was heated at 40 C. for ninety minutes in a water bath.

The precipitated sulphur was filtered by suction on a Buchner funnel and was washed with a 20 per cent solution of sodium chloride until the filtrate was neutral to litmus.

The precipitate was ground into 500 cc. of water, was shaken well and was divided into ten equal portions, each portion of which was sufficient for one bath. This was added to the bath water just previous to use, producing an opalescent colloidal suspension in which the source of sulphur was elemental colloidal sulphur containing a small amount of sodium sulphate.

Data in respect to the absorption of sulphur were obtained in sixteen patients who presented pathologic conditions of the skin and in two patients who did not have lesions of the skin and who served as controls. A general résumé of the data is shown in tables 1 to 4.

In charts 1 and 2 are plotted curves showing the variations in the concentration of sulphur in the blood as the treatment progressed.

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2. Stockholm, Mable; and Koch, F. C.: A Quantitative Method for the Determination of Total Sulfur in Biological Material, J. Am. Chem. Soc. **45**: 1953, 1923.

3. Benedict, S. R.: The Estimation of Total Sulphur in Urine, J. Biol. Chem. **6**:363, 1909. Denis, W.: The Determination of Total Sulphur in Urine, J. Biol. Chem. **8**:401, 1910.

TABLE 1.—*Cases in Which Sulphur Bath, Type 1, Was Administered*

Patient	Age and Marital State	Clinical Diagnosis	Treatment in Addition to Sulphur Baths	Clinical Course	Sulphur in Blood, Mg. per 100 Cc.	
					Beginning of Treatment	End of Treatment
C	Woman, 23, single	Acne vulgaris, deep seated on back with infected sebaceous cysts	Hygienic measures; roentgen ray; dietary regimen	Striking response to treatment	185	435
D	Man, 41, married	Dermatitis herpetiformis	Ultraviolet rays; removal of foci of infection	Great improvement in cutaneous condition	180	330
E	Man, 26, married	Dermatitis herpetiformis	.....	Striking response to baths; dermatitis checked	175	395
F	Woman, 26, married	Dermatitis herpetiformis	Autoserum and iodine-free diet; polyglandular treatment	Slight temporary improvement; some improvement under polyglandular treatment	172	175
G	Woman, 32, married	Dermatitis herpetiformis	Autoserum	Striking symptomatic response while continuing baths and emollients	170	233
J	Man, 24, single	Prurigo mitis	Hygienic measures; ultraviolet light; autoserum	75 per cent improvement in five weeks	152	182
K	Woman, 31, married	Acne vulgaris, moderate degree	Hygienic measures; ultraviolet rays; autogenous vaccine	Condition cleared up except for some residual scaling; no recurrence	152	530
N	Woman, 34, married	Psoriasis of twenty years' duration	Crude coal tar; ultraviolet rays	Psoriatic patches cleared up in one month		
O	Man, 24, single	Acne cachecticorum, pustular and furuncular lesions	Hygienic measures; ultraviolet rays; neoarsphenamine vaccines	Beneficial symptomatic response; exacerbation several months later; evident therapeutic value of the baths	390	430

TABLE 2.—*Cases in Which Sulphur Bath, Type 2, Was Administered*

Patient	Age and Marital State	Clinical Diagnosis	Treatment in Addition to Sulphur Baths	Clinical Course	Sulphur in Blood, Mg. per 100 Cc.	
					Beginning of Treatment	End of Treatment
B	Man, 45, married	Psoriasis	.....	Results not as striking as in previous experiment; respiratory factor playing a part in absorption of sulphur	195	230
H	Woman, 36, married	Psoriasis	Crude coal tar ointment; ultraviolet rays; autoserum	Condition cleared up in two weeks	167	185
L	Woman, 28, widow	Psoriasis	Crude coal tar ointment; ultraviolet rays; autoserum	Condition cleared up in four weeks	152	165
I	Man, 24, single	Acne cachecticorum pyodermia	Radium; removal of foci of infection; drainage of abscesses	Material improvement in four weeks	160	170

Patients C, D, E, F, G, J, K, N and O received baths of type 1; patients B, H, L and I received baths of type 2, and patients P, R, S and T received baths of type 3. Patients A and M did not receive sulphur baths.

It is at once apparent from the curves that in those patients who received the type 1 bath there was a marked rise in concentration of

TABLE 3.—*Cases in Which Sulphur Bath, Type 3, Was Administered*

Patient	Age and Marital State	Clinical Diagnosis	Treatment in Addition to Sulphur Baths	Clinical Course	Sulphur in Blood, Mg. per 100 Cc.	
					Beginning of Treatment	End of Treatment
P	Man, 29, single	Acne cachecticorum (pyodermia); furuncles on trunk, pubic and anal regions	Hygienic measures; surgical measures for acne; radium; removal of foci of infection; cauterization; foreign protein	Rise in sulphur content of blood and urine followed by sharp fall; good condition after one year of treatment	175	175
R	Man, 24, single	Acne vulgaris of back and chest	Roentgen ray; surgical measures for acne; ultraviolet rays	Comparable to results of sulphur bath with respiratory mask; marked improvement after one month	170	222
S	Woman, 24, married	Acne vulgaris; lesions on face with pyodermic abscesses	Roentgen ray; surgical measures for acne; ultraviolet rays	Considerable improvement	150	195
T	Woman, 47, married	Psoriasis vulgaris	.....	80 per cent improvement in psoriasis	170	235

TABLE 4.—*Control Cases in Which Sulphur Baths Were Not Administered*

Patient	Age and Marital State	Clinical Diagnosis	Treatment in Addition to Sulphur Baths	Clinical Course	Sulphur in Blood, Mg. per 100 Cc.	
					Beginning of Treatment	End of Treatment
A	Man, 42, single	Cardiovascular syphilis	Usual hospital diet	Increase in sulphur content due to treatment with sulpharsphenamine	210	215
M	Man, 27, single	General paresis	Usual hospital diet	No increase in sulphur of blood or urine	100	100

sulphur in the blood; patient K, for example, exhibited a threefold elevation. Those patients who received baths of types 2 and 3 in general exhibited a distinct rise in sulphur in the blood but a rise which was much less marked than in those who received the type 1 bath. However, the symptomatic improvement in those patients in whom the amount of sulphur in the blood was only slightly elevated was just as marked as in those in whom elevations were pronounced. One might conclude from this either that the extent of absorption of sulphur bears no relation to

the symptomatic improvement or else that only slight elevations accompany a definite therapeutic effect.

Patients A and M were used as controls and did not receive baths. All patients received the usual hospital diet, the sulphur content of which was determined to be equivalent to that of a well balanced normal diet.

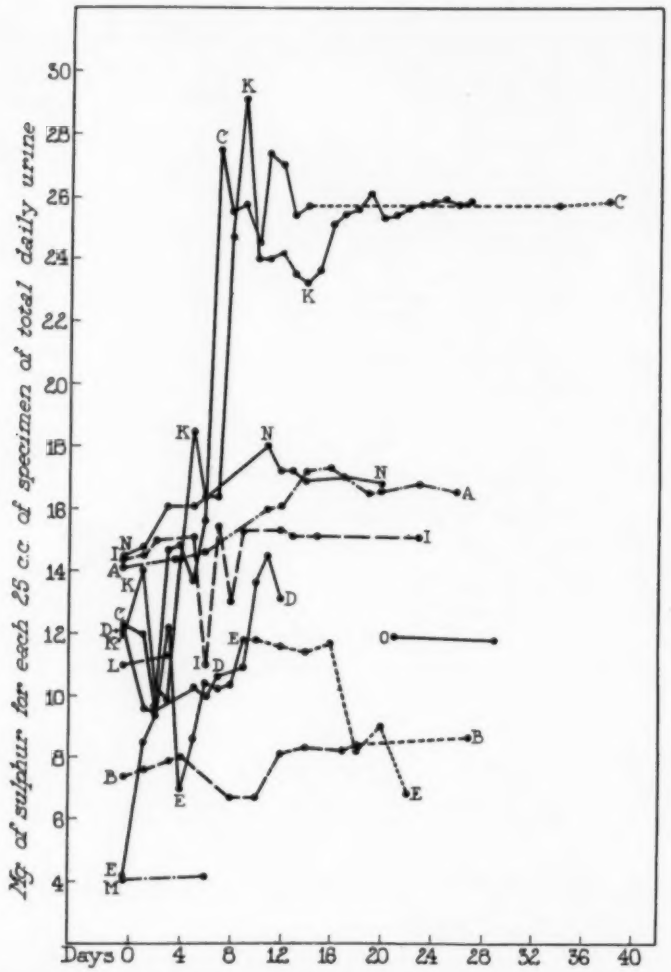

Chart 3.—Cases in which baths of types 1 and 2 were given and control cases. Graphic representation of increase in output of sulphur in the urine as treatment progressed. The circle-dash-dot line indicates a control patient receiving a diet known to contain sulphur (the condition in case M was complicated by the administration of sulpharsphenamine). The circle-dash line indicates a patient who received a daily sulphur bath and who wore a respiration mask. The amount of sulphur in the diet was of a known normal amount. The solid line broken by circles indicates a patient receiving a daily sulphur bath without wearing a respiration mask. The diet was normal. The broken line indicates a discontinuance of the sulphur baths.

From the curves it is seen that the normal sulphur content is from 140 to 210 mg. per hundred cubic centimeters of blood. In general, the total amount of sulphur excreted in the urine is progressively increased (charts 3 and 4) parallel with the increase in sulphur in the blood. These results are not so striking, however, because of the extreme variations in urinary output and the lack of cooperation of the patients in the collection of the total daily specimens.

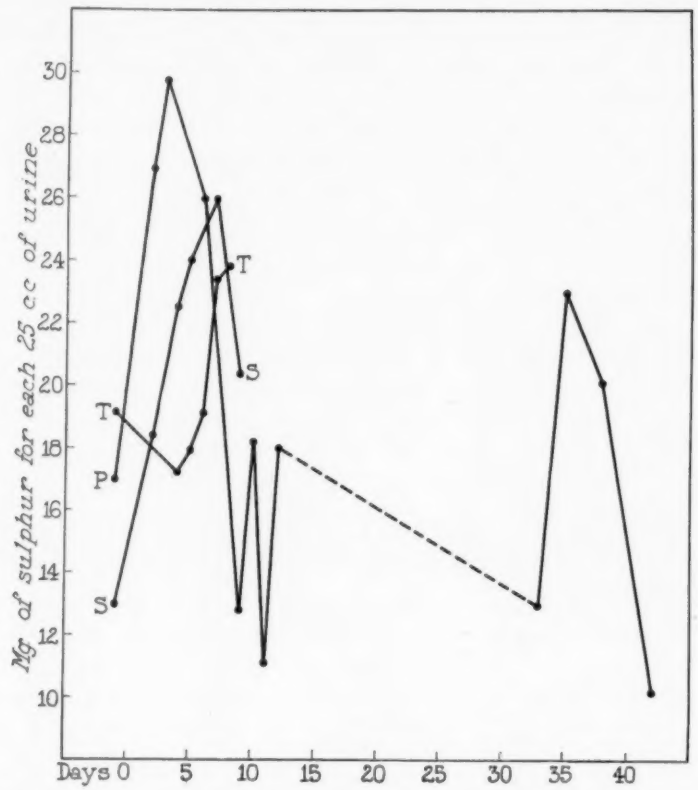

Chart 4.—Cases in which baths of type 3 (colloidal sulphur) were given. The graphic representation is similar to that in chart 3.

The broken lines indicate the period during which sulphur baths were not given, and the value for sulphur in the blood is lowered during this time. It was learned that patient O occasionally had taken sulphur baths at home.

The sharp rise and subsequent fall of the value for sulphur in the blood of patient P and the sharp preliminary fall followed by a rise in patient T do not lend themselves to explanation. On the average, in those patients who received the type 3 colloidal bath, the sulphur value was comparable to that in the patients who received the type 2 bath.

Sulphur baths have their greatest therapeutic efficiency in diseases of vesicular and pustular types. We do not wish to suggest that sulphur baths are a panacea in the treatment for these diseases, but we are decidedly of the opinion that this procedure is a valuable addition to the therapeutic armamentarium. The colloidal sulphur baths were also found to be of symptomatic value in cases of generalized pruritus due to diverse causes.

No speculations will be offered in this preliminary report as to the rôle played by compounds of sulphur in the blood stream in regard to skin diseases. Locally, sulphur undoubtedly acts as an astringent and a mild antiseptic.

SUMMARY

Sixteen patients who presented various cutaneous conditions were given sulphur baths as a portion of the therapeutic regimen employed in their cases. The total sulphur content of the blood and urine was determined during the course of treatment.

From these data, it is concluded that considerable sulphur is absorbed when a bath is prepared in such a way that sulphur dioxide is evolved. If the influence of sulphur dioxide is eliminated from the bath either by having the patient breathe through a gas mask or by preparing a bath containing only colloidal sulphur, the rise in the concentration of sulphur in the blood or the total amount of sulphur excreted is much less marked, although the therapeutic response is as good.

Sulphur baths are a valuable adjunct in dermatologic practice, but the mechanism of their action is unknown. Further studies on this question are in progress.

THE CONTROVERSY OVER THE ITCH MITE*

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The demonstration of the itch mite in 1834 in Alibert's clinic in the Saint Louis Hospital in Paris and its establishment as the cause of a specific disease furnish one of the most interesting stories in medicine.

The disease scabies is so contagious that this fact could not escape the notice of unprejudiced observers. However, observers were prejudiced, and for a long time the learned held to the view that all cutaneous eruptions were a kind of excrement, a throwing off by this organ of depraved humors arising in the body. This view gave to the disease manifestations on the cutaneous surface a dignity and an importance as being one of the chief means of arriving at a diagnosis which it later lost and has never recovered.

The cutaneous manifestations of scabies are not simple. The itch mite has as a consistent associate the streptococcus and as a frequent associate the staphylococcus. These three combined give rise to a bewildering number of symptoms, and he was a daring man who would try to unravel the puzzle. Add to this the attitude of physicians of that day in regard to cutaneous diseases. On seeing a cutaneous lesion they did not think of the lesion, but their mind instantly began to speculate on the type of humor or internal disturbance which was the presumptive cause. This naturally led to the almost entire neglect of the details of skin manifestations in general. If the eruptions were scabby or scaly, the disease was called scabies, the noncontagious thus being confounded with the contagious.

Although the learned in the time of Alibert were prejudiced far beyond argument or reason in regard to the scabitic diseases, the peasantry and the lower classes were not. It is said that the sharp-eyed young galley slaves in the harbor at Leghorn would often pick out from their fingers mites which they regarded as the cause of their troubles, and Rennucci, who later demonstrated the mite in Alibert's clinic, learned this procedure from the peasant women in his native Corsica. There were also exceptions among the learned. Rabelais and Ambrose Paré, three hundred years before Alibert's time, attributed scabies to a citron, an insect. Bonomo in a letter to Redi, written forty-seven years before the demonstration by Rennucci of the itch mite, found it in cuniculi in the skin, and made good microscopic drawings of it and of its eggs.[1]

* Submitted for publication, Feb. 5, 1929.

1. Lane, J. E.: Bonomo's Letter to Redi, Arch. Dermat. & Syph. **18**:1 (July) 1928.

THE CONTROVERSY CONCERNING ACARUS IN ALIBERT'S CLINIC

The controversy concerning *Acarus* is most interesting, and was carried on with all the temperamentality and acerbity so usual and so interesting in religious discussions and in political campaigns; in other words, with the animation that is present when politics, beliefs or money are at stake, and of beliefs there were plenty among the physicians of those days.

Alibert did not discover the itch mite, but it is interesting that the first demonstration to attract universal attention occurred in his clinic, and he undoubtedly was mentally prepared for its reception. This condition of mental receptivity means a great deal in an estimation of this man, who showed this open-mindedness at a time when the disease was recognized almost universally as being constitutional and when this view had the sanction of tradition and authority for long years previously. Alibert had a remarkable plastic memory, and was able with his vast experience and his clinical ability to segregate out of the mass of inchoate scabitic diseases a symptom-complex of what is now known as scabies, and which he called the psoride pustuleuse; as far as this condition was concerned, he adhered to the idea of specificity in disease.

The idea of specificity in disease was not new. Sydenham, two hundred years before, had held it, and contemporaneously with Alibert, Lænnec and Broussais was convinced of it, but it required a strong practical mind and an intimate personal acquaintance with the various disease types to maintain it.

Besides the psoride pustulence which Alibert considered a specific disease, he knew, as before mentioned, of Redi's work and of the popular beliefs. It was under these circumstances and in cases in Alibert's clinic that Galés, the druggist of the Saint Louis Hospital, said he found *Acarus*, which Alibert delineated in his atlas as the cause of the disease. These observations and their acceptance by a man of Alibert's prominence caused a great stir. Many others tried to find the insect but failed; the reason is now known. They sought it in the vesicle and pustule which lie above and behind the female lying in the burrow. Finally it was shown that the figure in Alibert's book was that of a cheese mite. I have his atlas, published in 1833, in which Alibert's itch mite is delineated, and it certainly is not the mite of scabies. As a practical joke a physician put some dry powdered cheese in his coat pocket, and before examining the contents of a vesicle touched its top with his soiled finger; then when a smear was examined with a microscope, myriads of "cheese mites" were found. By this time Galés had left the hospital, taking with him the money he had received as a prize; he was running a hydrotherapeutic institute in the city. The acarians were completely discredited. Lugol in scorn had offered a prize of 300 francs for the demonstration of the veritable insect, but there were no takers. A storm

of ridicule and anger broke loose, but Alibert clung to his opinions. He was too good a clinician to renounce his psoride pustuleuse as a disease entity due to a contagium.

As late as 1833, the year before Rennucci demonstrated the real itch mite, Alibert recounted the experiences of a Spaniard named Casal, who said that in his native Asturias there were people dextrous in their art who could extract the small animal on the point of a needle, and when placed on a piece of smooth glass, it could be seen to run around. He further stated that the greatest number of the diseases attributed commonly to a degeneration of the humors were due to this insect.[2] One can imagine the scorn that such remarks would elicit from the victorious anti-acarians. Alibert acquired the reputation of a romancer, a reputation which Hebra, then a young man, took pains in his rough way to accentuate. As before mentioned, it was not until 1834, ten years after the acarians were considered vanquished, that Rennucci demonstrated the mite in its burrow. Extracting the insect on the point of a needle and seeing it crawl around on a thumbnail caused infinite joy among the acarians. Alibert immediately and triumphantly proclaimed that he would take no summer holiday. Lugol gave Rennucci the 300 francs; he also received a medal. Rennucci seems to have been bashful, and could not be induced to attend a banquet at Lugol's where he was to receive the prize, which finally had to be sent to him. It is not related that he divided the money with the women of his native Corsica, from whom he learned the technic of extracting the mite.

Rennucci's subsequent work, and that of d'Albin Gras, Lanquetin and Ferdinand Hebra completely established the rôle of *Sarcoptes* in scabies. The tenacity with which Alibert adhered to his views throughout this contest, in spite of failure and in the face of the sharpest sarcasm and ridicule, gives one an admirable idea of the constancy of the man.

Specificity now started out on the solid footing of demonstrated facts. It had still a long way to go, however, before it broke down strongly entrenched prejudice in the field of general medicine.

Subsequent to Rennucci's demonstration the fight shifted to Vienna, where the blunt Hebra insisted and proved that scabies was a local disease which could be cured with impunity. The humoralists, it will be remembered, had regarded it as the eruption or outbreak of an excrement, the suppression of which meant grave danger to the patient. Hebra and his followers went so far in their doctrine of the local independence of diseases of the skin as to disregard almost entirely the dependence of any of them on constitutional causes, a doctrine which for some years did much harm. However, the practice of medicine is usually better than the doctrines which appear to govern it.

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2. Alibert: La clinique de l'hôpital Saint Louis, 1833, p. 312.

SPECIFICITY

Now that the fact of specificity in disease is fixed, all the foregoing arguments may appear as idle discussion. This is far from being the case, as then specificity was an idea subject to controversy; today, it is a fact beyond discussion. One hundred years ago, as Sabouraud [3] said recently, the cause of no disease was known.

The difference between a disease with a fixed etiology and that same disease the status of which as a disease entity is maintained only by the vast experience and practical sense of individual observers is well illustrated by scabies, the first disease in which a definite etiologic organism was demonstrated. The practical clinician may know that he is dealing with a disease entity, but the clever writer has no difficulty in overturning his carefully thought out work.

At the present time the internist seeking for a visceral bacteriologic chemical or serologic diagnosis pays almost no attention to the skin. Formerly, none of the foregoing diagnoses were available; the physician relied on an exhaustive personal history and on external signs for an estimation of his patient's condition. Although the details of a cutaneous eruption were not considered important by him, its general characteristics, whether it was moist or dry for instance, were held significant, and to have this significance removed by Alibert, Hebra, Rennucci and Lanquetin was not welcome. To make matters worse in this direction, Schönlein was soon to show that *Achorion schönleinii* was the cause of favus, and Gruby was to do a similar disservice in the matter of the ringworms. Fortunately for the internist, visceral diagnoses facilitated by the use of the stethescope were being developed, although much ridiculed. It was said, for instance, that the disease inside a man would squeak its name through the instrument to the solemn listener.

With the development of the microscope and the physical sciences, a multiplicity of diagnoses can now be made: visceral, ectocrine, endocrine, bacteriologic, serologic and skiagraphic. The upshot of all this is that the modern internist is in almost as comfortable a position as an Egyptian high priest in the time of the Pharaohs, and he pays much less attention to skin manifestations than he ever has done. Movement in circles is still the order of the universe.

After the cause of scabies was discovered and the disease was proved to be entirely local, and an adequate and effective mode of treatment was adopted, all controversy and all general interest in it ceased. Attention to it was then confined to those few who were affected and to those still fewer who treated these patients.

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3. Sabouraud, R.: Les pyodermités et les eczémas, Paris, Masson & Cie, 1928, p. 161.

LECITHIN STUDIES IN SYPHILIS*

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That cholesterol and lecithin are interrelated in the body economy is a general belief. Especially is this the feeling regarding syphilis. Experiments have not yet proved what the relationships are. They may be purely structural in origin, purely functional or more probably both structural and functional. Indeed, the field seems an extremely fruitful one.

The variations obtained in cholesterol [1] made us particularly anxious to ascertain the changes in lecithin. Therefore, while accumulating data on cholesterol, we were investigating the various procedures for the estimation of phosphorus [2] or, more specifically, lipin phosphorus.[3] It was soon found that the methods involving "test tube" oxidations by sulphuric acid and nitric acid had to be discarded. The danger of bumping with the small amount of reagents used became a source of great concern for microdeterminations.[4] This led us to the use of the sulphuric acid and hydrogen dioxide suggestions of Bauman [5] and Briggs.[6] Digestions were greatly facilitated, but certain difficulties were encountered.[7] The figures obtained were not constant and often

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* Submitted for publication, March 6, 1929.

* From the Department of Dermatology and Syphilology, New York Post-Graduate School and Hospital and the Laboratory of Biological Chemistry at the College of Physicians and Surgeons, Columbia University.

1. Rosen, Isadore; and Krasnow, Frances: Cholesterol Studies in Syphilis, Arch. Dermat. & Syph. **20**:75 (July) 1929.

2. Bell, R. D., and Doisy, E. A.: J. Biol. Chem. **44**:55, 1920. Bloor, W. R.: ibid. **22**:133, 1915; **24**:447, 1916; **23**:317, 1915; **36**:33, 1918. Briggs, A. P.: Ibid. **59**:255, 1924. Greenwald: Ibid. **21**:29, 1915. Grigaut, A.: J. de pharm. et de chim., vol. 1, eighth series, 1925, p. 97. Krasnow, Frances; and Rosen, A. S.: Proc. Soc. Exper. Biol. & Med. **25**:352, 1928; **26**:67, 1928. Pouget and Chouchak: Bull. Soc. chim de France **5**:104, 1909; **9**:649, 1911. Tisdall, F. F.: J. Biol Chem. **50**:329, 1922.

3. Bloor (footnote 2, second, third, fourth and fifth references). Briggs (footnote 2, sixth reference). Greenwald (footnote 2, seventh reference). Grigaut (footnote 2, eighth reference). Krasnow and Rosen (footnote 2, ninth reference). Randles, F. S., and Knudson, A.: J. Biol. Chem. **53**:53, 1922. Whitehorn, J. C.: J. Biol. Chem. **62**:133, 1924.

4. Bloor (footnote 2). Greenwald (footnote 2). Grigaut (footnote 2). Whitehorn (footnote 3, seventh reference).

5. Bauman, E. J.: J. Biol. Chem. **59**:667, 1924.

6. Briggs (footnote 2).

7. Krasnow and Rosen (footnote 2).

too high, the variations depending on the amount of hydrogen dioxide employed.

After much manipulation, a satisfactory technic was evolved. The method as applied to the researches on lecithin, to be described presently, is detailed in a paper published by the Society for Experimental Biology and Medicine.[7]

Since our method differs from those recorded in the literature, we deemed it wise to establish anew the normal lecithin content of whole

TABLE 1.—*Data on Lecithin Values in Normal Subjects*

Milligrams per Hundred Cubic Centimeters	Women (7) Number	Men (42) Number	Total (49) Number	Total (49) Per Cent
160 to 169	0	1	1	2.0
170 to 179	1	4	5	10.2
180 to 189	2	9	11	22.4
190 to 199	0	11	11	22.4
200 to 209	2	8	10	20.4
210 to 219	2	5	7	14.3
220 to 229	..	3	3	6.1
230 to 239	..	1	1	2.0

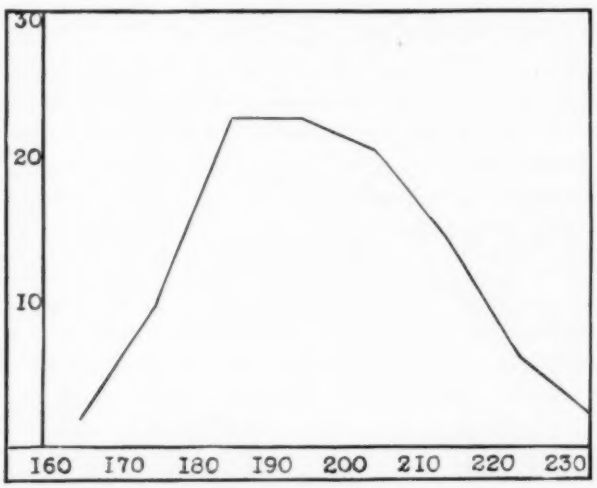

Chart 1.—Lecithin values in forty-nine normal subjects, seven of whom were women and forty-three men. The frequency curve is based on the figure for the complete series. In this and the subsequent charts the vertical scale represents the percentage of cases and the horizontal scale the number of milligrams of lecithin per hundred cubic centimeters of whole blood.

blood. For this purpose we were able to accumulate data on forty-nine normal medical students, seven of whom were women and forty-two men. The average for the former is 199 ± 15 mg., for the latter 197 ± 15 and for the total number 197 ± 15. The results are recorded in table 1 and chart 1.

Because the cases in women were so few, and especially since these averages are so nearly the same, the frequency curve in chart 1 is

based on the figure for the complete series. As may be seen, it is quite symmetrical, the peak (greatest percent) lying between 180 and 200 mg. per hundred cubic centimeters of whole blood. The extreme limits are 167 and 232 mg.

Our study of lecithin is more recent than that of cholesterol, hence the cases accumulated are fewer. This refers to the cases of syphilis as well as the normal ones, as there are only sixty-eight cases of syphilis.

TABLE 2.—*Data on Lecithin Values in Fourteen Patients with Secondary Syphilis*

Milligrams per Hundred Cubic Centimeters	Men and Women	
	Number	Per Cent
160 to 169	2	14.3
170 to 179	1	7.1
180 to 189	3	21.4
190 to 199	0	0
200 to 209	2	14.3
210 to 219	3	21.4
220 to 229	2	14.3
230 to 239	1	7.1

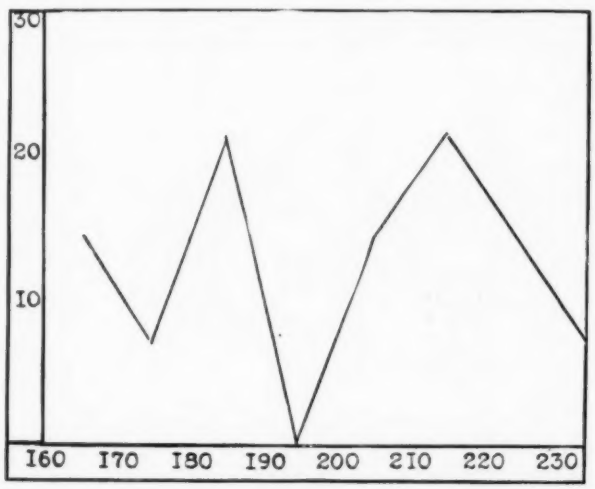

Chart 2.—Lecithin values in fourteen patients with secondary syphilis.

Thus, we have been unable to procure more than two cases of primary syphilis; one in which the patient was untreated, with 245 mg. of lecithin per hundred cubic centimeters of whole blood, and one in which the patient was treated, with 206 mg. Both fall in the higher range of lecithin.

Data procured for fourteen patients suffering from secondary syphilis are tabulated in table 2. The average range is 199 ± 22. This closely approximates the normal, but the frequency curve in chart 2 reveals that 56 per cent of the values lie above 200 mg. as compared

with 44 per cent of the values of the normal subjects as shown in chart 1. There are two peaks: one between 180 and 190 mg. (same as the normal) and the other between 210 and 220 mg., which is somewhat above normal. In general then, it seems that there is a tendency toward an increased content of lecithin in the blood in patients with secondary syphilis.

In tertiary syphilis, being the most common stage of the disease, we have been able to assemble fifty-two cases, fourteen women and thirty-

TABLE 3.—*Data on Lecithin Values in Fifty-Two Patients with Tertiary Syphilis*

Milligrams per Hundred Cubic Centimeters	Women (14)		Men (38)		Total (52)	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
160 to 169	0	0	1	2.6	1	1.9
170 to 179	1	7.1	..	0	1	1.9
180 to 189	3	21.4	3	7.9	6	11.5
190 to 199	1	7.1	10	26.3	11	21.2
200 to 209	3	21.4	9	23.7	12	23.1
210 to 219	3	21.4	6	15.8	9	17.3
220 to 229	1	7.1	5	13.1	6	11.5
230 to 239	..	0	1	2.6	1	1.9
240 to 249	1	7.1	2	5.2	3	....
250 to 259	1	7.1	1	2.6	2	....

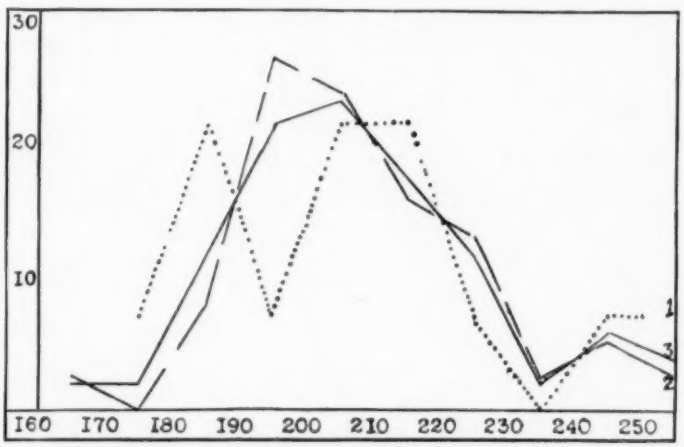

Chart 3.—Lecithin values in patients with tertiary syphilis. Curve 1 represents the values in fourteen women; curve 2, the values in thirty-eight men, and curve 3, the values in the total of fifty-two patients.

eight men. The data are given in table 3. In the one the mean is 207 ± 21, in the other 207 ± 18 and for the combination 207 ± 19.

Compared with chart 1 for normal lecithin, curve 3 of chart 3 presents a greater span, the increase lying within the high lecithin area. It shows 62 per cent of the tertiary cases above 200 mg., as compared with 56 per cent for the secondary and 44 per cent for the normal cases. The peak is reached between 200 and 210 mg. instead of between

180 and 200 mg. Curve 2 of chart 3, based on observations for the men, follows the combined curve closely except that the peak is reached at a lower lecithin figure. Curve 1 in chart 3, based on the results for female blood, is not quite so regular. There are two high points, one at a lower and the other at a higher lecithin value than either of the peaks in the two other curves.

From these observations it may be inferred, if only in a preliminary way, that there is a tendency toward an increased lecithin content of the blood in syphilis. A greater series is necessary to warrant a definite statement. Nevertheless, such a conclusion would be interesting for it is just the reverse of the observations for cholesterol.

MASSIVE WEEKLY INUNCTIONS WITH MERCURY*

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Étienne François Geoffroy, a Paris physician famous during the first third of the eighteenth century, in his "Tractatus de Materia Medica"[1] gave an interesting description of the method of mercurial inunction employed at that time, which differs especially in dosage from the present method. The patient was seated near a fire, and the parts to be anointed were rubbed until they became red and hot; the parts were then rubbed with the mercury ointment, the patient being removed a little farther away from the fire, so that the ointment would not become too much softened. On one day, the feet, knees and thighs were rubbed; on alternate days, the nates, wrists, arms and forearms. The inunctions were repeated daily or on alternate days, according to the constitution of the patient, until an abundant flow of saliva appeared. This method is not much different from the present practice. At this point, however, Geoffroy remarks:[2] "Two ounces of the mercurial ointment at a time suffice (Unguenti mercurialis ℥ij pro singula vice sufficieiunt). Some patients experience profuse and sufficient salivation after the first friction, others not until after the third; very rarely are more required." He cautioned that the mouth and fauces must be examined each time before an inunction is given.

This passage suggested that the same element in mercurial inunctions could be materially shortened, so that it would not be necessary to wait the customary three weeks for the introduction of a sufficient dosage. It was deemed somewhat dangerous to push the administration as rapidly

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* From the Departments of Dermatology and Syphilology, and of Pharmacology of Western Reserve University, with the collaboration of the Cleveland City Hospital and Lakeside Hospital.

* The expenses of this investigation were met mainly by the Lakeside Hospital and by grants from the Therapeutic Research Committee of the Council on Pharmacy and Chemistry of the American Medical Association and from the United States Pharmacopeia.

1. Geoffroy, Étienne F.: Tractatus de Materia Medica, Paris, Desaint and Saillant, 1741.

2. Geoffroy (footnote 1, vol. 1, p. 263).

as Geoffroy described, but it appeared interesting to determine whether the absorption could be hastened materially and with safety by an intermediate dosage, namely, by giving inunctions of 1 ounce of the 30 per cent ointment at weekly intervals.

EXPERIMENTAL PROCEDURE

The experiments were planned as follows: Six patients were selected at the Cleveland City Hospital, three with intact skins, two with papular syphiloderms and one with a follicular syphilitic eruption. This division was made purposely in order to determine whether there would be better absorption from the normal skin than from the diseased skin or vice versa. Thirty grams of mild mercurial ointment, U. S. P. (30 per cent mercury) was rubbed into the skin for sixty minutes by two rubbers once a week for four weeks. The ointment was applied to the body generally, but especially to the chest, thighs and forearms. This gave a total exhibition, at each treatment, of 9 Gm. of metallic mercury per week, and in the four rubs, a total of 36 Gm. There was a foreperiod check-up on both the urinary and the fecal output. The feces and urine were then collected, as shown in the charts, for a period of four days: two days before, the day of, and the day after, each inunction. Then there was an intermission of three days and another collection for four days. During the after period, the collections were somewhat more irregular, but, as revealed by chart 1, they were entirely sufficient to show the amount of mercury being excreted in the urine and feces.

RESULTS

The data have been plotted separately, as shown in chart 1, and the median urinary and fecal mercury excretion curves have been determined from the numerical data on the individual patients. These are represented by the dotted lines in chart 1. The median urinary curve undergoes a rapid initial rise after each rub and continues to rise during the week and with each additional inunction, reaching a maximum median of 0.98 mg. on the fourth day after the fourth rub. The median fecal curve shows a rapid initial rise after the first rub and then tends to dip, in some cases at the end of the first week. This is followed by a marked increase after the second rub, a slight dip at the end of the second week, and then a gradual progressive increase up to the end of the fourth week. The charts also show that there is a greater degree of variability among the individual patients than among the medians of the various methods of administration shown in chart 2.

The numerical data on the individual patients have been combined and reduced to medians and extremes. These numerical ranges are given in table 1, showing the total excretion of mercury, urinary mercury, fecal mercury, and the urine-feces (U:F) ratio, at the end of the first, second and fourth weeks.

Comparison of Methods of Administration.—The value of the massive weekly rubs can best be judged by comparison with other methods of administration; namely, simple inunction with 50 per

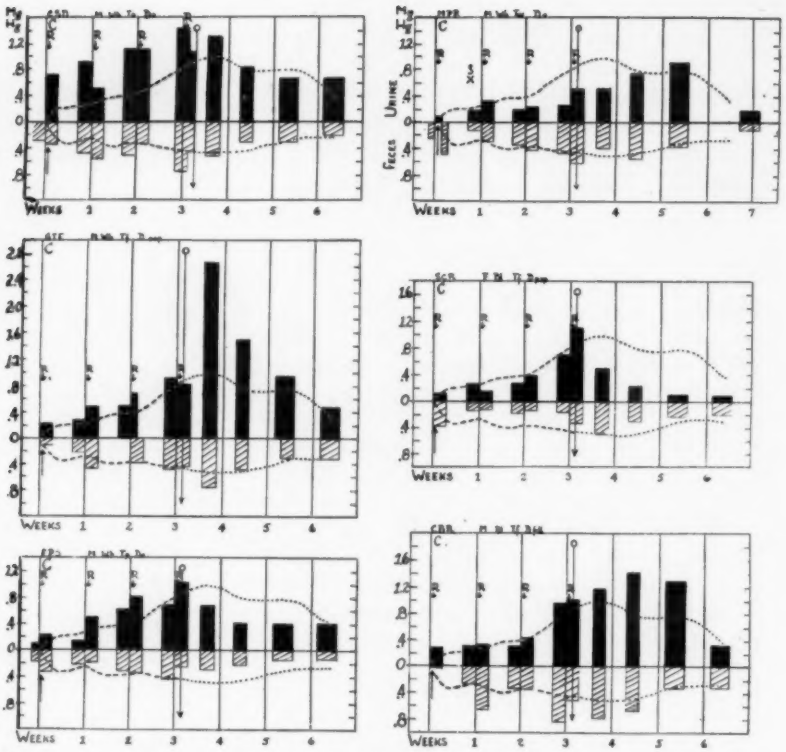

Chart 1.—Individual charts of patients, showing daily urinary and fecal excretion of mercury after intensive weekly inunctions. The solid blocks above the zero line represent the urinary excretion of mercury; the hatched blocks inverted below the line, the fecal excretion of mercury. The dotted lines show the median excretion for all patients. The horizontal lines correspond to milligrams of mercury, each division representing 0.2 mg. The short ascending arrows indicate the beginning of the treatment; the long descending arrows the end of the treatment. *R* indicates when the rubs were administered. *S* indicates the onset of salivation. The letters from left to right identify the patient, the sex (*M.* and *F*), the race (*Wh* and *Bl*), the condition of the teeth (*T. ex., g., f., p.*: teeth excellent, good, fair, poor)), and the cutaneous lesions (*D.o., fol., pap.*: dermatitis none, follicular, papular). *C* stands for City Hospital.

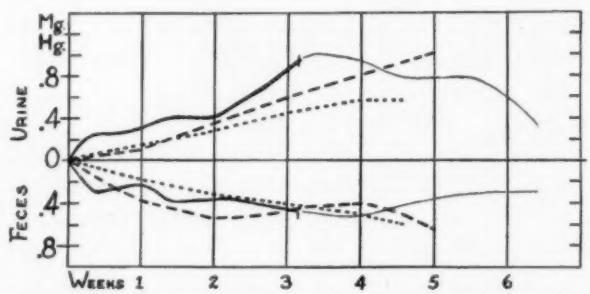

Chart 2.—A comparison of the median urinary and fecal excretion of mercury with the weekly and daily inunctions. The intensive inunction is represented by the heavy continuous line; the after-period of the intensive inunction by the light continuous line. The simple inunction with 50 per cent ointment is shown by the broken line and the simple inunction with 25 per cent ointment by the dotted line.

cent ointment, clean inunction with 50 per cent ointment, simple inunction with 25 per cent ointment, injections of mercuric sodium bromide and injections of mercuric salicylate. The results of these methods of administration have been published previously [3] with the exception of those of the simple inunction with 25 per cent ointment which we will mention presently.

The simple inunction with 50 per cent ointment was administered as daily rub of 4 Gm. of 50 per cent mercurial ointment, U. S. P., making a total of 14 Gm. of metallic mercury per week. The clean inunctions with 50 per cent ointment were carried out in the same manner as the simple inunctions with 50 per cent ointment, but the excess of ointment remaining on the surface of the skin was removed with benzene. The simple inunctions with 25 per cent ointment were administered in the same manner as the simple inunctions with 50 per cent ointment except that the 50 per cent U. S. P. ointment was diluted to a 25 per cent ointment, so that 7 Gm. of metallic mercury was administered per week. A daily injection of an aqueous solution of mercuric sodium bromide

TABLE 1.—*The Daily Excretion in Milligrams of Mercury, Median and Extremes*

	First Week		Second Week		Fourth Week	
Excretion	Median	Extremes	Median	Extremes	Median	Extremes
Total	.44	0.36-1.30	0.66	0.46-1.65	1.41	0.91-3.43
Urine	.27	0.15-0.89	0.40	0.20-1.13	0.93	0.51-2.66
Fecal	.21	0.13-0.47	0.33	0.17-0.52	0.49	0.30-0.78
U:F	1.10	0.71-2.00	1.70	0.56-2.90	1.80	1.10-3.50

(10 mg. equaling 5.5 mg. of mercury) was given into the gluteal muscle. Thirty-three milligrams of metallic mercury was administered per week. The mercuric salicylate was administered as a weekly injection of 1 cc. of a 10 per cent mercuric salicylate in a suspension of vegetable oil. Sixty milligrams of mercury was administered per week. The excretion of mercury after each injection of mercuric salicylate occurred in two phases: a high immediate excretion and a lower later excretion. This later phase is an indication of the mercury remaining in circulation, and so it has been used in comparison with the massive weekly inunctions. Few data for the fecal excretion of mercury in the treatment with salicylate were obtainable; so these figures were omitted.

Chart 2 shows a comparison of the median urinary and fecal excretion of mercury after intensive weekly inunctions with mercury, with the other methods of inunction. The numerical comparison between the level of the excretion of mercury with the weekly inunctions and that

3. Cole, H. N., and Sollmann, T.: Excretion of Mercury After Intramuscular Injection of Mercuric Bromide, Inunction and Rectal Suppositories, Arch. Dermat. & Syph. **14**:683 (Dec.) 1926; Clinical Excretion of Mercury, ibid. **17**: 625 (May) 1928; ibid. **19**:105 (Jan.) 1929.

with other methods of administration is shown in table 2. For simplicity, the end of the second week was selected, which is an indication of the excretion at the middle of the treatment; and also the end of the fourth week, when the treatment was finished.

Table 2 shows that at the end of the second and fourth weeks the urinary excretion of mercury was equal to that resulting from the injections of mercuric sodium bromide and more than that from the simple inunction with 50 per cent ointment, the clean inunction with 50 per cent

TABLE 2.—*Level of Mercury Excretion with the Intensive Method in Terms of Other Methods*

Excretion of Mercury	Level at the End of Second Week	Level at the End of the Fourth Week
Median total	½ less than simple, 50 per cent inunction	Equal to simple, 50 per cent inunction
	⅛ more than clean, 50 per cent inunction	7/10 more than clean, 50 per cent, inunction
	⅛ more than simple, 25 per cent inunction	3/10 more than simple, 25 per cent inunction
	Equal to injection of mercuric sodium bromide	1/8 more than injection of mercuric sodium bromide
	½ less than salicylate injection	
Median urinary	¼ more than simple, 50 per cent inunction	1/10 more than simple, 50 per cent, inunction
	⅝ more than clean, 50 per cent inunction	8/5 more than clean, 50 per cent inunction
	⅝ more than simple, 25 per cent inunction	6/5 more than simple, 25 per cent inunction
	Equal to injection of mercuric sodium bromide	Equal to injection of mercuric sodium bromide
	½ less than salicylate injection	1/2 of salicylate injection
Median fecal	⅛ less than simple, 50 per cent inunction	Equal to simple, 50 per cent inunction
	Equal to clean, 50 per cent inunction	Equal to clean, 50 per cent inunction
	⅛ more than simple, 25 per cent inunction	1/10 more than simple, 25 per cent inunction
	½ more than injection of mercuric sodium bromide	1/2 more than injection of mercuric sodium bromide
	Equal to salicylate injection	
Median U:F ratio	Twice that of simple 50 per cent inunction	1/5 less than simple, 50 per cent inunction
	Three times that of clean, 50 per cent inunction	Twice that of clean, 50 per cent inunction
	⅛ less than simple, 25 per cent inunction	Equal to simple, 25 per cent inunction
	⅜ less than injection of mercuric sodium bromide	9/10 less than injection of mercuric sodium bromide
	⅜ less than salicylate injection	

ointment and the simple inunction with 25 per cent ointment. The fecal excretion of mercury at the end of the second week was less than that following simple inunction with 50 per cent ointment, equal to that after clean inunction with 50 per cent ointment and more than that after the inunction with 25 per cent ointment and injection of mercuric sodium bromide. At the end of the fourth week, however, it was equal to that following simple inunction with 50 per cent ointment and more than that after clean inunction with 50 per cent ointment, simple inunction with 25 per cent ointment and injections of mercuric sodium bromide. This shows that the absorption is about the same as with the daily simple inunctions with 50 per cent ointment and with the injections of mercuric

sodium bromide and more than with the daily clean inunction with 50 per cent ointment and the daily simple inunction with 25 per cent ointment.

Cumulative Excretion—The cumulative excretion reflects the total quantity of mercury which has been in circulation in a given time and is thus a criterion of the rapidity of the absorption. The medians of the cumulative excretion are shown in table 3.

The level of the cumulative excretion of mercury, in terms of the other methods of administration, is shown in table 4.

TABLE 3.—*The Cumulative Excretion of Mercury (Median) with the Intensive Weekly Inunctions*

	At End Of			
	First Week, Milligrams	Second Week, Milligrams	Third Week, Milligrams	Fourth Week, Milligrams
Total mercury	2.81	7.69	14.69	23.93
Urinary mercury	1.35	3.93	8.27	15.18

TABLE 4.—*The Level of Cumulative Excretion of Mercury with Intensive Inunction, in Terms of Other Methods*

Cumulative Mercury	Level at the End of the Second Week	End of Fourth Week
Total	Equal to simple, 50 per cent inunction	Equal to simple, 50 per cent inunction
	2/5 more than clean, 50 per cent inunction	1/3 more than clean, 50 per cent inunction
	4/5 more than simple, 25 per cent inunction	1/3 more than simple, 25 per cent inunction
	1/10 more than injection of mercuric sodium bromide	1/6 more than injection of mercuric sodium bromide
Urinary	Twice that of simple, 50 per cent inunction	1/3 more than simple, 50 per cent inunction
	4 times that of clean, 50 per cent inunction	3 times that of clean, 50 per cent inunction
	Twice that of simple, 35 per cent inunction	Twice that of simple, 25 per cent inunction
	1/6 less than injection of mercuric sodium bromide	1/10 more than injection of mercuric sodium bromide
	4/5 less than salicylate injection	4/5 less than salicylate injection

Table 4 shows that the total cumulative excretion of mercury after the intensive inunction is equal to that after the daily simple inunction with 50 per cent ointment, more than after the daily clean inunction with 50 per cent ointment and the simple inunction with 25 per cent ointment and more than after the injections of mercuric sodium. The urinary cumulative excretion at the end of the fourth week is more than that after the daily simple inunction with 50 per cent ointment, the clean inunction with 50 per cent and the simple inunction with 25 per cent ointment and injection of mercuric sodium bromide, but less than that after the injection of salicylate. These figures and those for the median cumulative excretion show that the intensive weekly administration of mercury gives a good absorption and excretion.

After-Period.—After the inunctions were stopped, the observations were continued for three weeks, as shown in chart 1 and in table 5. The curves for both the urinary and fecal excretion of mercury show that the decline during the after-period is slower than the rise during the treatment. Three weeks after the rubs were discontinued, the urinary level was from one half to one tenth of the maximal level, and the median one third of the maximal level. The fecal excretion behaved similarly, as shown in table 5. As compared with the inunctions with 50 per cent ointment, the urinary excretion of mercury after the intensive rubs at the end of the sixth week was about one fifth lower than that following simple inunctions with 50 per cent ointment and twice as high as that after clean inunctions with 50 per cent ointment. The fecal excretion of mercury after the intensive rubs at the end of the sixth week was about three fifths lower than that following simple inunctions with 50 per cent ointment and equal to that after clean inunctions with 50 per cent ointment. The results from the intensive weekly inunction with 30 per

TABLE 5.—*Daily Excretion of Mercury in Milligrams: After-Period*

Excretion of Mercury	Middle of Fifth Week, Thirty-Second Day		Middle of Sixth Week, Thirty-Eighth Day		Middle of Seventh Week, Forty-Fifth Day	
	Median	Extremes	Median	Extremes	Median	Extremes
Total	1.20	0.52–2.08	1.12	0.33–1.65	0.60	0.31 –0.91
Urinary	0.775	0.24–1.45	0.80	0.10–1.31	0.37	0.11 –0.70
Fecal	0.40	0.24– .66	0.31	0.16–0.37	0.25	0.125–0.34
U:F	1.93	.....	2.6	.....	1.5	.....

cent ointment, therefore, lies between those from the daily clean and simple inunctions with 50 per cent ointment, as regards the duration of excretion.

Salivation.—There was but one case of salivation in the six patients. This occurred in P. R., a white man with a clear skin and good teeth. The salivation was mild and started the day after the second inunction. We were rather surprised that it occurred in this case instead of in one of our three patients with a papular eruption. One would naturally think that when such a large amount of mercury was used at one time, and on a patient with a damaged skin, he would be more prone to show symptoms of mercurialization than one with a normal skin. This, however, was not the case, and bears out our analogous observations made in an earlier paper.

Influence of the Condition of the Teeth.—The condition of the patient's teeth likewise seemed to have little or no bearing on the appearance of salivation. In our series, three patients had fairly good, one excellent, one poor and one average good teeth. The case of salivation occurred in the patient with excellent teeth. In other words, our observations here confirm those made in studies of salivation with injections of mercuric sodium bromide. The patient who has salivation

before the high level of excretion of mercury is reached probably has a special susceptibility to mercurial salivation. Moreover, in that study we could not find that the condition of the teeth, if oral hygiene was followed, made much difference in the susceptibility to salivation.

Clinical Application.—The excretion curves show that the massive weekly rubs with the 30 per cent mercurial ointment are fully as effective as the ordinary daily inunctions with 50 per cent ointment. As compared with the simple inunction with 25 per cent ointment, the absorption is more rapid; in fact, nearly a week is gained in the beginning, and this lead is preserved throughout. The principal clinical advantage of this method of administration would be in cases in which the patients require supervision by a physician. The clinical history, as well as the form of the excretion curves, shows that this method is entirely satisfactory.

RÉSUMÉ

Massive weekly inunctions of the body with 30 Gm. of mild mercurial ointment, U.S.P., equivalent of 9 Gm. of metallic mercury, caused little or no irritation of the skin. A slight salivation was noticed in but one case. Studies of excretion showed a greater and more rapid cumulative excretion of mercury in the urine and as large a fecal output of mercury as with the simple inunctions with 50 per cent ointment, clean inunctions with 50 per cent ointment, simple inunctions with 25 per cent ointment and the daily intramuscular injections of mercuric sodium bromide. The excretion of mercury in the after-period of four weeks was also similar to that following daily inunctions.

We believe that the technic has practical advantages in the treatment of certain syphilitic patients.

THE USE OF GENTIAN VIOLET IN EROSIO INTERDIGITALIS SACCHAROMYCETICA *

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Erosio interdigitalis saccharomycetica, which is being seen and recognized with increasing frequency, is a disorder peculiarly resistant to the methods of treatment usually employed. As a result of clinical experiments in treating the condition with a solution of gentian violet, I feel an effective method has been made available.

Yeasts fall into that group of micro-organisms which are gram-positive and have a peculiarly tenacious affinity for gentian violet. Ever since the important work of Churchman [1] with dyes and micro-organisms, it could be surmised that the various yeasts and *Monilia* would be vulnerable to gentian violet; but it has remained for clinicians in only recent days to use this dye in a rather empiric way. Faber and Clark [2] have reported on the successful use of gentian violet in the treatment of thrush and at the same time have presented convincing data against the use of such conventional agents as boric acid and the ordinary mouth washes. Recently Sanderson and Smith [3] described good results from the use of gentian violet in treating patients who had a blastomycetic infection, thus improving the armamentarium against this disease. Elsewhere, I am describing separately new specific staining methods for yeasts and certain others of the fungi based on the reaction in Gram's method, and an account of the restraining power of gentian violet on yeasts in a study of the various yeasts and fungi.

Erosio interdigitalis saccharomycetica occurs, usually in Jewish women, characteristically on the webs of the third and other interdigital spaces of the hands as a shallow reddish erosion with a sodden, undermined, peripheral collarette of scale. It is from the space beneath this collarette that the organism is found most abundantly, and here it shields itself from the action of fungicidal agents. All ordinary antiseptic remedies have been used with only mediocre results. The disease is essentially chronic, and relapses have been common following treatment. The patient complains bitterly of pain, burning and itching and finds her work in the kitchen burdensome, but, unfortunately for the progress of the disease, she is forced by her circumstances to continue it.

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* Submitted for publication, Dec. 10, 1928.

* From the Department of Dermatology, University of Illinois, service of Dr. F. E. Senear.

1. Churchman, J. W.: The Selective Bactericidal Action of Gentian Violet, J. Exper. Med. **16**:221 (Aug.) 1912.

2. Faber, H. K., and Clark, E. B.: The Prevention and Treatment of Thrush (Oidial Stomatitis), Am. J. Dis. Child. **34**:408 (Sept.) 1927.

3. Sanderson, E. S., and Smith, D. C.: The Effect of Gentian Violet on the Organism of Blastomycotic Infection, Arch. Dermat. & Syph. **16**:153 (Aug.) 1927.

METHOD

With a cotton-wool applicator the lesion is liberally painted with a 2 per cent solution of aqueous gentian violet, and after this has dried, Gram's solution of iodine is applied. Applications are made twice daily. The use of rubber gloves in household work is advised, and contact of the affected areas with soap and water and ordinary irritants is avoided whenever possible.

REPORT OF CASES

CASE 1.—S. C., a neurotic Jewess, with erosio interdigitalis saccharomycetica, had been treated with numerous applications and both roentgen and quartz light exposures for several months, with little if any improvement. The use of a 1 per cent solution of gentian violet resulted in improvement and the condition was entirely cleared up in three weeks. She has remained well for six months and carries on her usual work in the kitchen.

CASE 2.—E. Z., a Jewish housewife, aged 40, who had had the disease for nine months, was relieved of itching and other symptoms following several days' treatment by this method. She then discontinued the applications of gentian violet, but performed her kitchen duties. She returned in two weeks with a relapse. After again continuing the treatment for three weeks the lesions cleared up and they have not recurred.

CASE 3.—G. S., a Gentile housewife, aged 54, had been troubled with this disorder for six months. She did not improve following the use of Whitfield's ointment, various other ointments, lotions and antiseptics, but after a week of treatment with applications of gentian violet combined with Gram's solution of iodine, there was rapid improvement.

In several cases observed later, the use of Gram's iodine solution following the applications of gentian violet was found to hasten the disappearance of the lesions.

It is advisable to continue the use of the gentian violet for some time after a clinical cure has been achieved in order to guard against the characteristic tendency of the condition to recur. In several of my cases relapses occurred, but with the resumption of the applications of gentian violet the condition disappeared quickly without further relapse. One of the latter patients was seen four months after the second clinical cure and said that there had been no further trouble, although she had done a great deal of housework.

SUMMARY

1. Other workers have found gentian violet a potent agent against yeast infections.

2. A method is here described which has been used in twenty cases of erosio interdigitalis saccharomycetica with good results.

3. Case reports are cited in which the method has been successful.

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STATISTICS OF THE TEN MOST COMMON SKIN DISEASES

BASED ON AN ANALYSIS OF 973,090 PUBLISHED CASES*

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Students have always been interested in the numerical study of their problems. Compilations have been popular for many generations. Observers have published their individual accounts of the prevalence of skin diseases in their experience, and for many years reports of members of the American Dermatological Association have been compiled by Dr. S. Pollitzer. The staff at the New York Skin and Cancer Hospital has made résumés of the diagnoses recorded at that institution. It has seemed worth while to review the published reports, and to tabulate the observations limited to the ten most common conditions encountered.

TABLE 1.—*Compilation of Published Statistics on Order of Incidence of Most Common Diseases of the Skin*

Disease Order of Total of 973,090 Patients*	Crocker 10,000 Public Patients	Bulkley 10,000 Clinic Patients	Pollitzer 679,376 A. D. A. 1878-1911 Inclusive	Pollitzer 58,387 A. D. A. 1916	S. & C. 44,346 Clinic 1913-1917 Inclusive	S. & C. 62,698 Clinic 1918, 1919, 1920 and 1922	S. & C. 108,283 Clinic 1923-1927 Inclusive
Eczema	1	1	1	1	1	1	1
Acne	5	2	2	2	2	2	2
Scabies	3	5	3	5	6	6	3
Psoriasis	4	3	10	4	5	7	7
Seborrhea	..	9	5	6	4	4	4
Impetigo	2	10	4	3	9	3†	8
Urticaria	6	6	9	8	3	5	6
Dermatitis venenata	..	4	11	10	7	8	5
Tinea	..	8	8	9	8	9	9
Alopecia	..	..	6	11	..	..	..
Pediculosis	..	..	7	12	..	..	..
Pruritus	8	7	12	14	11	11	11
Verruca	..	11	13	13	10	10	10
Ecthyma	..	..	..	7	..	..	..

* There may be some reduplication as A. D. A. members at the Skin and Cancer Hospital undoubtedly reported their hospital patients for 1916 to Dr. Pollitzer.
† Based on the years 1919, 1920 and 1922.

I recognize that the method of compilation of the original figures is open to many objections. But it seems to me that on the whole the index of error is constant. Probably just as many cases have been omitted from any one group as have been added in error. It seems also that the fact that there is an agreement as to the ranking fourteen diagnoses made by American observers over such a long period of time is significant. Particular lessons may be gleaned from a study of the charts, and individual conclusions may be drawn, but these are beside the purpose of the present presentation.

* Submitted for publication, Jan. 15, 1929.
* Read at a meeting of the Clinical Society of the New York Skin and Cancer Hospital, Dec. 21, 1928.

It would be interesting if further statistical studies arranged as this one would appear from other sources, so that comparisons might be made from time to time. The original statistical reports on which my tables are based are readily available, and I have not extracted the actual numbers of cases reported under each diagnosis, but have given the percentages.

TABLE 2.—*Compilation of Published Statistics of Percentage of Incidence of Most Common Diseases of the Skin*

Disease Order of Total of 973,090 Disease	Crocker 10,000 Public Patients	Bulkley 10,000 Clinic Patients	Pollitzer 679,376 A. D. A. 1878-1911 Inclusive	Pollitzer 58,387 A. D. A. 1916	S. & C. 44,346 Clinic 1913-1917 Inclusive	S. & C. 62,698 Clinic 1918, 1919, 1920 and 1922 Inclusive	S. & C. 108,283 Clinic 1923-1927 Inclusive
Eczema	26.3	26.11	22.5	16.0	20	24.0	21.0
Acne	4.44	10.44	7.8	7.1	13	10.4	10.0
Scabies	7.96	2.13	4.9	3.2	4	5.0	5.0
Psoriasis	7.18	3.18	2.8	3.6	4	4.1	4.0
Seborrhea	....	1.12	3.9	3.1	4	5.1	5.0
Impetigo	9.61	0.99	3.8	4.3	2	5.5*	3.0
Urticaria	4.40	1.80	2.9	2.9	5	5.1	5.0
Dermatitis venenata	....	2.56	1.6	2.5	3	3.0	5.0
Tinea	3.18	0.96	3.2	2.8	3	2.0	2.0
Alopecia	....	....	3.0	2.1	..	...	...
Pediculosis	....	....	3.4	1.9	..	...	...
Pruritus	0.90	1.24	1.6	1.2	1	0.8	0.8
Verruca	....	1.14	1.0	1.6	1	1.5	1.0
Ecthyma	....	....	...	3.1	..	...	...

* Based on years 1919, 1920 and 1922.

Eczema and acne together account for practically 30 per cent of the total reported diagnoses. Except for the figures reported by Crocker from public practice in England, these two diseases rank first and second for all reports.

	Crocker[1] 10,000	Bulkley[2] 10,000	Pollitzer[3] 679,376	Pollitzer[4] 58,387	S & C[5] 44,346	S & C[5] 62,698	S & C[5] 108,283
Eczema	26.3	26.11	18.6	16.0	20.0	24.0	21.0
Acne	4.44	10.44	8.4	7.1	13.0	10.4	10.0

1. Crocker, H. Radcliffe: Diseases of the Skin, Philadelphia, P. Blakiston's Son & Company, 1903, p. 1401.

2. Bulkley, L. Duncan: Diseases of the Skin, New York, Paul B. Hoeber, 1898, p. 41.

3. Pollitzer, S.: J. Cutan. Dis. **32**:312 (April) 1914.

4. Pollitzer, S.: J. Cutan. Dis. **36**:294 (May) 1918.

5. New York Skin and Cancer Hospital Annual Reports. The following conditions have been considered together in order to avoid certain irregularities which would otherwise have crept into the tables: Acne includes acne indurata, rosacea and vulgaris. Tinea includes circinata, cruris, versicolor, dyshidrosis and pompholyx. Verruca includes plantaris, planum and vulgaris. During the years 1918 to 1922 inclusive there were 81,205 recorded diagnoses made with a tabulation for all years except 1921, which decided me to divide into periods rather than to make one continuous compilation. Syphilis, which ranked second with Pollitzer in the report of 1914 (9.4 per cent), has purposely been omitted from this compilation since the problem of the diagnosis of syphilis has changed since 1910.

It is interesting to learn that the ranking six diagnoses from each reported set of figures average 50 per cent of all diagnoses, although no report includes the same six as another report and in the same order of prevalence. The ranking six diagnoses are:

	Percentage
Crocker: Eczema, impetigo, scabies, psoriasis, acne, urticaria	57
Bulkley: Eczema, acne, psoriasis, dermatitis venenata, scabies, urticaria	44
Pollitzer: Eczema, acne, scabies, impetigo, pediculosis	46
Pollitzer: Eczema, acne, impetigo, psoriasis, scabies, seborrhea	46
S & C: Eczema, acne, urticaria, seborrhea, psoriasis, scabies	50
S & C: Eczema, acne, impetigo, seborrhea, urticaria, scabies	54
S & C: Eczema, acne, scabies, seborrhea, dermatitis venenata, urticaria	51

A review of the tables shows that fourteen diagnoses were all that were required to include the most common skin diseases reported. If one adds each column separately one finds that Crocker with only 8 diagnoses gives 60 per cent of his total of 10,000 public patients; Buckley with 11 diagnoses accounted for 47 per cent of his 10,000 clinic patients; Pollitzer in his early résumé needed only 13 diagnoses for 55 per cent of 679,387 reported cases; in his report of 1916, Pollitzer accounted for 60 per cent of 58,387 cases with 14 diagnoses; at the New York Skin and Cancer Hospital 11 diagnoses averaged over 60 per cent for the years during which 215,327 patients were seen.

Giving each report a mean of 11 diagnoses, one finds that these ranking cases account for 57 per cent of all diagnoses for a total of little less than a million patients extending over a half a century of recent and modern dermatology. The list of most common diseases has varied little despite recent advances in aids to clinical diagnosis. True enough, diseases of rare occurrence are diagnosed more often, but the fundamental problems of the previous generation of practitioners of dermatology are still extant. Despite new knowledge, urticaria remains urticaria; and unfortunately eczema is still the scrap bag of the profession with few indications that some of its territory is being eroded by recent studies.

And the greatest lesson of all: a knowledge of less than a dozen conditions agreed as being of the class of diseases of the skin would make any practitioner no less than 60 per cent proficient in the field of dermatology.

TOXIN PRODUCTION BY SPIROCHAETA PALLIDA*

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Nothing is definitely known of the agencies by which *Spirochaeta pallida* produces the lesions of syphilis. Some of the symptoms of the disease suggest the production and activity of toxins by the organism, but these have not been demonstrated.

In my experiments, Mandler and Berkefeld filtrates of ascites-agar-kidney and ascites-bouillon-kidney cultures of Noguchi strains of *Spirochaeta pallida* grown for from three to eight weeks were found relatively nontoxic for rabbits by intratesticular injection and for young guinea-pigs by intraperitoneal inoculation. Slight local inflammatory reactions and loss in weight were no more marked than those observed with control filtrates of sterile mediums incubated for the same period and injected in similar amounts per kilogram of weight.

These experiments indicated that cultures of spirochetes alleged or believed to be *Spirochaeta pallida* do not produce demonstrable amounts of soluble or exogenous toxins in vitro, although the results are of limited value since it is doubtful if *Spirochaeta pallida,* and particularly *Spirochaeta pallida* virulent for rabbits, have been really cultivated, as indicated by the studies of Miss Kast and me.[1] Certainly the two strains employed in this study were found to be nonvirulent for rabbits by intratesticular inoculation.

Rabbits were inoculated intratesticularly with the Nichols-Hough strain of *Spirochaeta pallida;* the organs were removed at the acme of acute infection when dark-field examination showed numerous and actively motile organisms. Each gram of tissue was thoroughly emulsified in 2 cc. of cold sterile saline solution, shaken mechanically for an hour at room temperature and centrifugated at once; the supernatant fluids were passed through Berkefeld candles. Dark-field examinations for spirochetes were negative in all cases.

Control extracts were prepared at the same time and in the same manner from normal nonsyphilitic testes of rabbits.

Immediately after preparation, amounts of 2 cc. of both extracts were injected into the testes of rabbits.

Nothing was observed but occasional slight inflammatory reactions which developed and subsided within forty-eight hours after inoculation, and these were of approximately the same character and degree with both extracts.

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* Submitted for publication, Feb. 19, 1929.

* From the Research Institute of Cutaneous Medicine of Philadelphia.

1. Kolmer, J. A., and Kast, C.: Am. J. Syph. **13**:419 (July) 1929.

Rabbits inoculated with the extracts of syphilitic testicular tissue were kept under observation for three and one-half months; retarded or late testicular changes or syphilitic infection of the testes or lymph glands did not develop in any of the animals.

Therefore, it may be stated that filtrable toxins of *Spirochaeta pallida* could not be demonstrated in the acute testicular lesions of rabbits. They may have been produced and become bound to tissue cells, but none could be demonstrated in these experiments.

Fourteen years ago I attempted to extract endotoxins from two of the Noguchi strains and from Zinsser's strain A of *Spirochaeta pallida* by centrifugating mass broth-ascites cultures and preparing extracts of the organisms in sterile cold distilled water by autolysis and by thoroughly grinding dried organisms and extracting in cold sterile saline solution. Both extracts were then passed through sterile paper and Berkefeld filters and found sterile by culture and free of spirochetes by dark-field examination.

Amounts varying from 0.5 to 5 cc. were injected into the testes of rabbits, with the result that mild inflammatory reactions were sometimes produced by the larger doses which subsided in from three to four days. In no instance were syphilomas produced; lymph gland transplants were not made as they were not employed in those days.

Rabbits received intravenous injections of from 1 to 3 cc. per kilogram of weight. None died, although some which received from three to six injections at intervals of three days lost weight.

Young guinea-pigs received from 1 to 5 cc. per kilogram of body weight intravenously. Two died within a few minutes with "anaphylactoid" symptoms of twitching and brief convulsions.

Additional guinea-pigs receiving repeated doses of the same size by intraperitoneal injection at three to four day intervals lost weight; three died without disclosing any demonstrable macroscopic changes other than marked degrees of emaciation.

These effects were similar to those commonly observed with similar preparations of various bacteria and commonly ascribed to the presence of "endotoxins" or toxic products of the proteins of the organisms.

It may be, therefore, that spirochetes, alleged to be *Spirochaeta pallida,* produce the so-called endotoxins; at least mildly toxic substances may be secured by the extraction of large numbers of cultivatable spirochetes.

SUMMARY

1. Filtrable or soluble exogenous toxins could not be demonstrated in cultures of spirochetes alleged to be *Spirochaeta pallida* but nonvirulent for rabbits.

2. Exogenous toxins could not be demonstrated in filtrates of the tissues of acute testicular syphilis of rabbits.

3. Feebly toxic substances (endotoxins?) were obtained from cultures of spirochetes subjected to autolysis or to desiccation, grinding and extraction.

A DERMATITIS CAUSED BY LARVAE OF ANCYLOSTOMA CANINUM *

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AND
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DALLAS, TEXAS

While conducting experimental studies on creeping eruption, a disease caused by infective larvae of one of the hookworms, *Ancylostoma braziliense*, infesting the dog and the cat, we produced a somewhat similar dermatitis, using larvae of another hookworm, *Ancylostoma caninum*, that infests the dog and the cat.

The observations which have been made on the latter infection indicate strongly that it is a clinical entity as well as an experimental one. A skin disease caused by larvae of *Ancylostoma caninum* is naturally of much interest in itself. Since it is in some respects similar to, and probably occurs occasionally in, a mixed infection with creeping eruption, it has an added importance in the diagnosis of, and the treatment for, the latter disease. The present paper is a brief discussion of some studies on the caninum dermatitis.[1]

EARLY EXPERIMENTAL STUDIES ON CREEPING ERUPTION

With Kirby-Smith, we [2] were able to show that the exciting cause of creeping eruption is an infective nematode larva. By applying to the human skin infective larvae obtained in cultures from dogs and cats from a locality in which there was a high incidence of creeping eruption, we [3] produced symptoms and lesions characteristic of the disease, thus demonstrating that these animals are concerned in the causation of the infection. Not only linear lesions were produced but, in addition, papular ones from which no linear extensions occurred.

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1. For the purpose of differentiating between the dermatitis (creeping eruption) caused by *A. braziliense* and the one caused by *A. caninum*, it is convenient in the present paper to refer at times to the former as braziliense dermatitis or braziliense infection, and to the latter as caninum dermatitis or caninum infection. The term "infection" is used in the semipopular sense.

2. Kirby-Smith, J. L.; Dove, W. E., and White, G. F.: Creeping Eruption, Arch. Dermat. & Syph. **13**:137 (Feb.) 1926.

3. White, G. F., and Dove, W. E.: Official Record, U. S. Dept. Agric., no 5, October, 1926.

Using infective larvae from a dog, we inoculated the flexor surface of a forearm, Sept. 9, 1926. An itchy papular lesion (fig. 1 *A*) resulted; it was not followed by a linear one and disappeared within two weeks. A single larva obtained from a cat was used in a similar inoculation of another volunteer. A papular lesion (fig. 2 *B*) was produced which was unaccompanied by a linear one and which practically disappeared within a fortnight. Similar results were obtained in other similar experiments.

At autopsies on the animals from which the cultures had been obtained, two species of hookworms identified morphologically as *A. braziliense* and *A. caninum* were found. Each dog was found to be infested with both of these species of hookworm. The cultures of larvae obtained from the animals and used in the inoculations were therefore probably mixed. One of the two cats studied apparently harbored *A. caninum* only and the other *A. braziliense* only.

The fact that two species of hookworm larvae were being used in the inoculations, and that two types of lesions were produced, suggested at the time that possibly one species of hookworm was causing one type of lesion and the other species was causing the other type. Studies in which larvae from pure cultures were used were consequently necessary.

STUDIES WITH PURE CULTURES

When larvae from pure cultures of *A. braziliense* were used in inoculations into the skin, the advancing linear lesions that characterize creeping eruption were produced [4] (fig. 2). When larvae from pure cultures of *A. caninum* were similarly used, the lesions of creeping eruption did not follow. These larvae invaded the skin, however, and a dermatitis was produced.[5]

Pure cultures were obtained of larvae of *A. caninum* which was harbored by a cat obtained in Washington, D. C. About ten larvae from such a culture were applied at each of five different locations on the two forearms. Apparently six of the fifty larvae penetrated the skin. At two of the four places at which invasion took place, slight pin-pricking sensations of a few seconds' duration, indicating ingress of the larvae, were experienced. In one instance these occurred about twenty minutes after the inoculation and in the other in about one hour. Minute red circular macules indicating points of entry of larvae were noted in two of the areas of inoculation. None was seen at the other locations at which invasions took place.

By the end of the first day, a circular patch of erythema from 2 to 3 cm. in diameter surrounded each point of penetration. There was a

4. White, G. F., and Dove, W. E.: Causation of Creeping Eruption, J. A. M. A. **90**:1701 (May 26) 1928.

5. White, G. F., and Dove, W. E.: Parasitol. **15**:149 (Dec.) 1928.

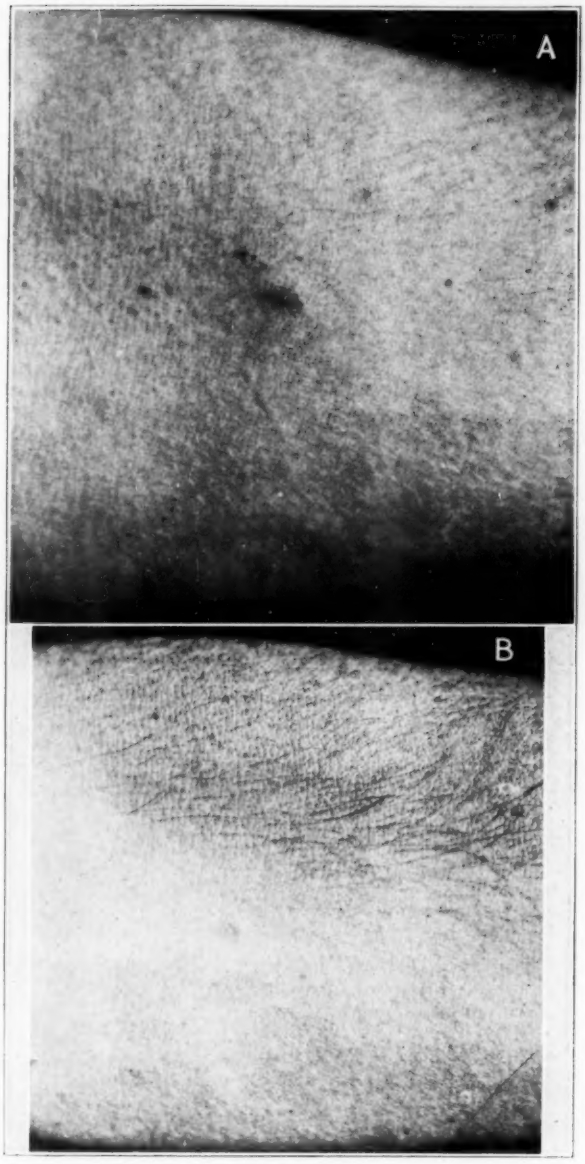

Fig. 1.—Itchy papular lesions: *A*, appearance two days after inoculation with a hookworm larva obtained from a dog, and *B*, seven days after inoculation with a hookworm larva from a cat.

well marked urticaria-like elevation from 4 to 7 mm. in diameter about each point of ingress. By the end of the second day, the patches of erythema had enlarged; the areas occupied by them were swollen, and about each point of penetration a well-formed papule (fig. 3) was present. The visible lesions gradually became less marked after the third day (fig. 4), and by the end of the second week some, and by the end of the third week all, of them had practically disappeared. Linear extensions did not take place from any of the papules.

Fig. 2.—Linear lesion of creeping eruption; appearance eight days after inoculation with a larva of *Ancylostoma braziliense*.

The itching accompanying the experimental infections began from five to twelve hours after the application of the larvae. The intensity and the frequency of occurrence of the pruritic symptoms increased up to the end of the second day. After the third day, these were less marked and the periods during which the patients were free from itching were lengthened. After the first week, little discomfort was experienced.

The larvae employed in another experiment were from a strain of *A. caninum* obtained in Texas. Adult hookworms were recovered from

a dog at autopsy and were fed to a pup which had shown no evidence of previous infestation with hookworm. From the latter animal, samples of specimens of stool were used in making charcoal cultures. In this manner, infective larvae were obtained in pure cultures.

Larvae from these cultures were applied to the flexor surface of the forearm of a second volunteer. Within fifteen minutes, pin-pricking sensations indicative of penetration were felt. Within twenty-five min-

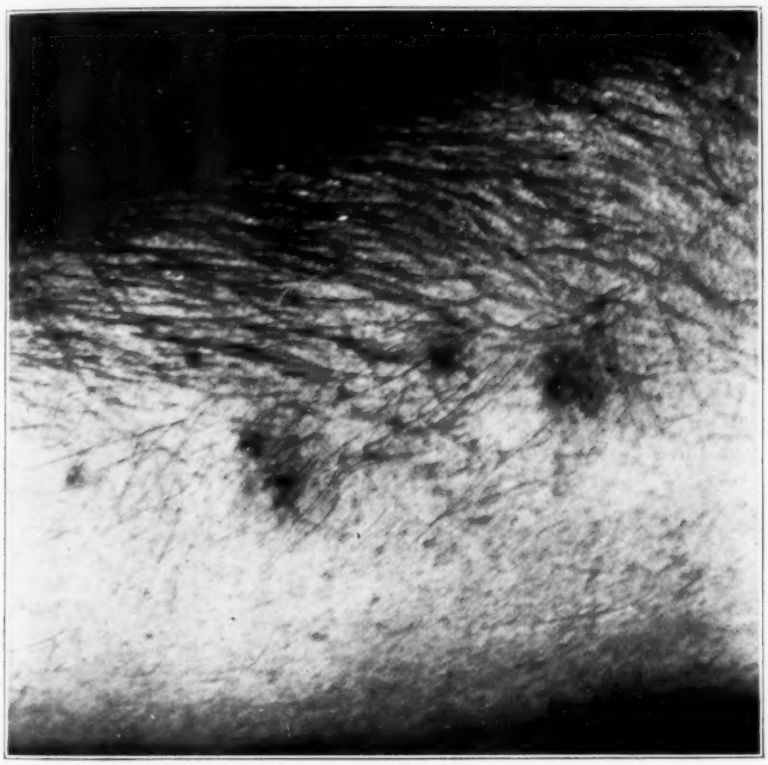

Fig. 3.—Papular lesions obtained two days after inoculation with larvae from a pure culture of *Ancylostoma caninum* from a cat.

utes, urticaria-like elevations were present about the points of ingress. These disappeared within one hour. Soon there was a general swelling of the forearm. This partially subsided by the end of the first day, at which time well formed papules were present (fig. 5). The area of inoculation became erythematous, the erythema being more pronounced about the base of the papules on the second day. Four days after inoculation there was evidence of healing, and the lesions completely disappeared during the second week.

CLINICAL OCCURRENCE OF CANINUM DERMATITIS

Two types of lesions had been observed by dermatologists among their cases of creeping eruption. We had an opportunity of seeing these two types in examinations that we made in clinical cases. It is of particular interest that the lesions produced experimentally with larvae of *A. braziliense* and those produced with larvae of *A. caninum* are similar, respectively, to the two kinds that had been observed clinically.

Fig. 4.—Papular lesions shown in figure 3 five days after inoculation.

In an examination of dogs at the Jacksonville, Fla., city pound for information relative to the reservoir of infection for creeping eruption, nearly all of the animals were found to be infested with *A. braziliense*. It was learned at the same time that most of the dogs were infested with *A. caninum* also. Though the number of worms of the former species recovered at autopsy as a rule exceeded those of the latter, the presence of twenty or more worms of the latter in a single dog was not unusual. Cats also harbored these two species of hookworm. Since dogs and cats are abundant in the locality in which the studies were made, and since each female worm may lay about 10,000 eggs a day, the reservoirs of

infection seem to be adequate not only for braziliense infections, but for caninum infections also.

The conditions favorable for the growth of larvae of *A. braziliense* to the infective stage are also favorable for those of *A. caninum*. Some of the conditions under which the eggs of these two species hatch readily and the larvae grow quickly to the infective stage are illustrated in the method for cultivating and obtaining larvae used in most of these studies.[6] Feces from an infested dog or cat are mixed with sand or charcoal, and water is added until the moisture present resembles that of damp sand. The mixture is set aside for incubation in a damp chamber having the same temperature as, or one slightly higher than, that of a living room. In about five days the culture contains infective larvae. These migrate to the surface of the sand or charcoal.

Fig. 5.—Papular lesions obtained one day after inoculation with larvae from a pure culture of *Ancylostoma caninum* from a dog.

Damp sand, outdoor temperature of the summer months and protection from the direct rays of the sun would seem, therefore, to afford a favorable environment for the growth of larvae of both *A. braziliense* and *A. caninum* to the infective stage and for infection of the skin with these species. With these observations in mind, and the fact that a perspiring skin in a warm atmosphere is a favorable condition for penetration by larvae of each of these species of hookworm, it is not too much to expect that caninum dermatitis does occur clinically; and, furthermore, that it may occur in a mixed infection with creeping eruption.

DISTRIBUTION

The foregoing statements strongly suggest that dermatitis due to invasion of the skin by larvae of *A. caninum* may occur during the rainy portions of the summer in sandy subtropical districts of the

6. White, G. F.: Science **66**:302 (Sept. 30) 1927.

United States. It is natural to expect that it may occasionally occur at other times, also, wherever dogs, cats or other animals are infested with this hookworm. In this connection, the following statements regarding the geographic distribution and the hosts of *A. caninum*, furnished by Dr. M. C. Hall of the Bureau of Animal Industry, United States Department of Agriculture, is of special interest:

Ancylostoma caninum is a cosmopolitan species which has been reported from a large number of countries throughout the tropics and the north and south temperate zones. In these areas it probably occurs wherever suitable hosts and favorable local conditions are present. Apparently its northern range overlaps that of *Uncinaria stenocephala*, and *A. caninum* is replaced north of the overlapping region by *U. stenocephala*. What happens in the Antarctic region and the adjoining portion of the south temperate zone is not known at present because of a lack of investigation along this line in those areas. While our records are incomplete it is probable that this common dog hookworm is present in every state in the United States.

A. caninum is best known as a parasite of the dog, but it is a common parasite of members of the Canidae and Felidae. The hosts which have been reported for this worm include the following animals, this list not being checked for validity or synonymy of scientific names or validity of the record: Dog, cat, man, jackal, wolf, fox, fennec fox, sloth bear, leopard, rat, *Felis tigris*, *F. temmincki*, *F. nebulosa*, *F. pardus*, *F. viverrima*, *Viverricula malaccensis*, *Genetta ludia*, *Cyon dukhunensis*, *Canis pallipes*, *C. aureus*, *Vulpes bengalensis*, *V. leucopus*, *V. lagopus*, *V. vulgaris* and *Melursus ursinus*.

TRANSMISSION OF THE DISEASE

A condition favorable for the occurrence of caninum dermatitis is the presence of feces of dogs, cats or other animals infested with *A. caninum* on a suitable soil, with sufficient moisture and warmth and protection from sunlight. The infective larvae may be carried about in the surface water remaining after rains and may contaminate other places. The larvae may reach new localities in many ways. Contact of the skin with damp soil contaminated with infective larvae of *A. caninum*, especially during warm weather, may therefore result in infection.

SYMPTOMS

Within a few hours after invasion of the skin by larvae of *A. caninum*, an urticaria-like swelling occurs about the point of ingress of each worm. Within a day, an area of erythema is present about each site of invasion. Within two days a papule is formed about the point of penetration, and the infected area may be swollen. From the third day on, the lesions gradually subside, and within two or three weeks they practically disappear.

Pruritic symptoms begin within a few hours after infection. Periods of itching and at times of burning alternate with periods free from them. The frequency of these periods and the intensity of the symptoms increase during the first two or three days and then gradually diminish. After the first week, comparatively little discomfort is experienced.

DIAGNOSIS

Papular lesions accompanied by intense itching occurring on any part of the skin which has been in contact with damp soil during the warmer months of the year, in a locality in which dogs and cats are infested with *A. caninum*, suggest possible infection with larvae of this species of hookworm. If the papules have been preceded by urticaria-like swelling and erythema and are not followed later by linear lesions, the diagnosis of caninum dermatitis is further indicated. If the symptoms and the eruption tend to subside after the second day, the diagnosis is still further supported.

Differential Diagnosis.—The initial symptoms and lesions of caninum dermatitis are so similar to those of invasions of the skin by other nematode larvae, schistosome cercariae, insect larvae, some of the fungus infections, bites of insects, and still other dermatoses that an early diagnosis is often not possible.

Creeping Eruption: The occurrence of itchy papules followed by the linear serpigenous eruptions that characterize creeping eruption, on any part of the skin which has been in contact with damp soil in a locality in which dogs and cats are infested with *A. braziliense*, is usually sufficient for a diagnosis of creeping eruption.

Ground Itch: Looss,[7] working with *Ancylostoma duodenale*, demonstrated conclusively that the larvae of this human hookworm can pass through the skin and result in infestation. Soon afterward, Bentley [8] in India and Smith [9] in America (the former probably working with *A. duodenale* and the latter with *Necator americanus*) applied the larvae of these hookworms to the human skin, and each produced a dermatitis that was identified as the well recognized "ground itch." The occurrence of itchy papulovesicular eruptions when the skin has been in contact with damp soil in a district in which the human population is infested with one or both of the hookworms infesting man suggests possible infection with larvae of these worms.

"Stenocephala Dermatitis": Fülleborn [10] in Germany has produced a dermatitis experimentally by applying infective larvae of *Uncinaria stenocephala*, a hookworm occurring in dogs in Europe and elsewhere. Linear lesions and the absence of this species in the animals of any region will serve to exclude this dermatitis in making a diagnosis.

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7. Looss, A.: Records of Egyptian Government School of Medicine, Cairo, 1911, vol. 4.

8. Bentley, C. A.: Brit. M. J., Jan. 25, 1902, p. 190.

9. Smith, C. A.: Uncinariasis in the South, with Special Reference to Mode of Infection, J. A. M. A. **43**:592 (Aug. 27) 1904.

10. Fülleborn, F.: Inst. f. Schiffs. u. Tropenkrankh. **26**:121, 1928.

Schistosome Dermatitis: Cort [11] demonstrated that schistosome cercariae of the species *Cercaria elvae* may invade the human skin and cause itchy papular lesions which may become pustular. Such infections have been contracted by wading pools in some of the North Central States.

Dermal Myiases: Larvae of horse botflies [12] (*Gastrophilus*) migrating in the skin are reported as causing linear lesions. Larvae of ox-warble flies [13] (*Hypoderma*) touring in the deeper tissues cause tumor-like swellings as they now and then reach the skin.[14] Invasions of the skin by larvae of flies of the genus *Wohlfahrtia* are accompanied by boil-like swellings.

Fungus Infections: The deep-steated vesicular lesions and the persistence of the infections will generally serve to differentiate the dermatophytoses which are most likely to be confused with caninum dermatitis.

TREATMENT

Treatments for caninum dermatitis are yet to be determined. From the facts yet at hand, those suitable for early infection with creeping eruption would seem to be effective to a like degree in the early treatment, at least, for this disease.

SUMMARY AND CONCLUSIONS

1. A dermatitis has been produced experimentally by applying infective larvae of *A. caninum* to the human skin.

2. Papules followed by linear lesions characterize infections with *A. braziliense* (creeping eruption), whereas papules without linear extensions characterize infections with *A. caninum*. To what extent papules without linear lesions may result from *braziliense* infections and papules with them from caninum infections is yet to be determined.

3. The observations made thus far indicate that caninum dermatitis at times occurs clinically in a mixed infection with creeping eruption.

4. Owing to the extended geographic distribution of *A. caninum* and the ability of its infective larvae to invade the human skin, it seems likely that infections of the skin with this species may occur in widely different localities.

5. Caninum dermatitis must be differentiated from many other dermatoses, among which are creeping eruption, ground itch, "stenocephala dermatitis," schistosome dermatitis, dermal myiases and fungus infections.

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11. Cort, W. W.: Schistosome Dermatitis in United States (Michigan), J. A. M. A. **90**:1027 (March 31) 1928.

12. Dove, W. E.: Bull. 597, U. S. Dept. of Agriculture, 1918.

13. Bishopp, F. C.; Laake, E. W.; Brundrett, W. M., and Wells, R. W.: Bull. 1369, U. S. Dept. of Agriculture, April, 1926.

14. Miller, E. T.: Myiasis Dermatosa Due to the Ox-Warble Flies, J. A. M. A. **55**:1978 (Dec. 3) 1910.

CHRONIC DERMATOSIS WITH DEGENERATION OF THE COLLAGEN

REPORT OF A CASE *

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The title is not suggested as a diagnosis of the condition described, but is merely used as a working basis to present the clinical and pathologic observations in a case which I was unable to identify or to classify as a definite disease entity.

There are several conditions which show some resemblance, either clinically or pathologically, to that in this case: lichen ruber moniliformis, pseudoxanthoma elasticum, myxedema and others which will be dealt with in the discussion of differential diagnosis.

The patient was examined at the office of Dr. Richard L. Sutton, Kansas City, Mo. A piece of skin was removed from the thigh and prepared for microscopic study.

REPORT OF CASE

History.—Mrs. L. M., an American woman, aged 77, complained of an extensive basal cell carcinoma in the right frontal region just above the right eye and extending into the frontal bone. She was an underdeveloped woman about 4 feet 10 inches tall (147.32 cm.). The condition described was noticed incidentally on physical examination. Her family history was irrelevant. She gave a history of having had a more or less generalized skin eruption as long as she could remember, but did not know whether or not she was born with the condition. Most of the lesions had remained constant, but she had experienced some relapses at intervals of about a year. These relapses she was certain were not seasonal, nor were they due to any alteration in her mode of living. During a relapse, the lesions became larger and more numerous and were associated with slight itching. She said that the involved areas of the skin turned purple following a cold bath or in cold weather. The whole condition became accentuated following a cholecystectomy eight years before consultation. With the exception of the conditions mentioned, she had always been healthy and had never had any serious illnesses, injuries or operations.

Distribution and Description of the Lesions.—The lesions were almost universal in distribution. The sides of the face, under surface of the chin, chest, abdomen, shoulder, arms, dorsal surface of the hands, thighs and anterior aspects of the legs were universally covered with small confluent papules, the size of a pinhead. On the face, back and calves of the legs the lesions were scattered and discrete. The palms, soles and mucous membranes were exempt.

The lesions were dome-shaped papules, from 1 to 2 mm. in diameter, which were from ivory to light pink. They had a tendency to become confluent, arrang-

* Submitted for publication, April 2, 1929.

ing themselves in rows from 2 to 4 inches (5 to 10.16 cm.) in length, similar to a string of beads (figs. 1 and 2). They did not involve the hair follicles. There was no apparent evidence of inflammation, nor was there scaling or crusting. The eruption was monomorphous throughout.

There were practicaly no subjective symptoms except for slight itching at times. Generalized symptoms and lymphadenitis were absent. The condition had been diagnosed as eczema and treated with lotions on four or five occasions for itching, but there was no extensive or prolonged treatment.

Microscopic Study.—A small piece of tissue was removed from the thigh. This tissue was fixed in formaldehyde, blocked in paraffin, sectioned, mounted on slides with albumin fixative and stained by the following methods: (1) hema-

Fig. 1.—Lesions on the shoulder. Note the moniliform arrangement of the lesions and the uniformity of their size.

toxylin-eosin, (2) Pappenheim's stain, (3) Weigert's elastic tissue stain, (4) van Gieson's stain, (5) Perdrau's connective tissue stain and (6) "kresyl-echt-violett."

Hematoxylin-Eosin Preparations: Grossly, the regular continuity of the section was interrupted at intervals of about 2 mm. by a small circular or oval bluish-purple staining nodule about 1 mm. in diameter. These nodules were apparently in the corium, but pushed the epithelium overlying them up above the level of the adjacent surface (fig. 3).

On microscopic examination, the epithelium showed no evidence of scaling, vesicle formation or other abnormality. It had, however, become stretched and flattened out over the lesions. The pars papillaris was smoothed out so that the papillae and interpapillary ridges were almost entirely obliterated. Otherwise, the pars papillaris was apparently not affected. The essential pathologic process was

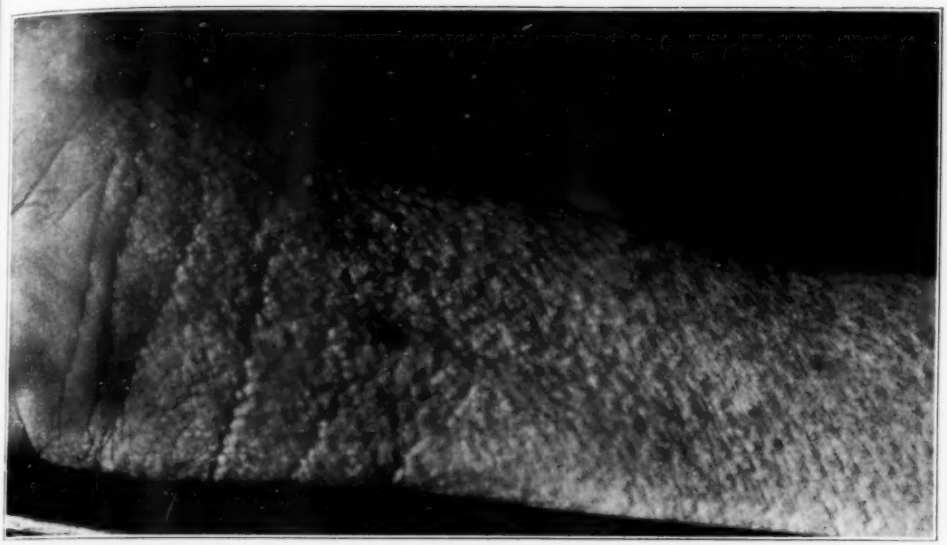

Fig. 2.—Lesions on the forearm. Note the confluence of the lesions, also the marked linear demarcation at the junction of the hand and forearm.

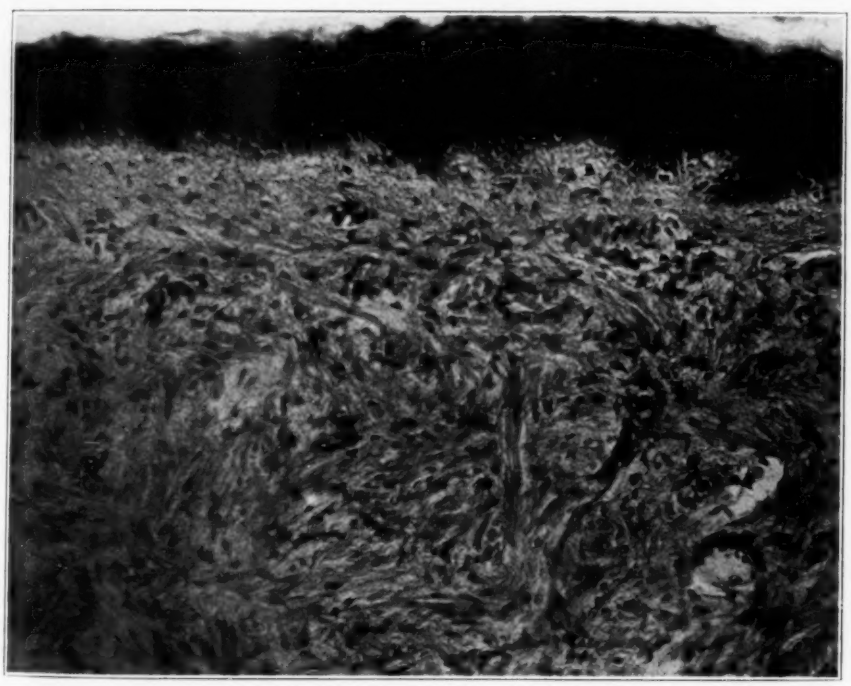

Fig. 3.—Location of the lesion in the subpapillary layer of the corium. The apparent cellular infiltration is not made up of lymphocytes or leukocytes. Low power; hematoxylin-eosin stain.

located in the subpapillary layer. The lesions stained bluish purple as contrasted with the pink-staining collagen of the intervening areas. The transition from the more normal regions to the actual lesions was striking but not abrupt. There seemed to be a gradually increasing discontinuity in the arrangement of the connective tissue as the lesion was approached.

In following the collagen bundles from the more normal areas to the central portions of the lesions they became swollen and edematous and split up into fibrils until the fascicular arrangement was entirely lost and the swollen fibrils appeared

Fig. 4.—This section was cut almost at right angles to the section in figure 3. It brings out the discreteness of the lesion, vascular changes and the fact that it is poorly supplied with blood vessels at the periphery of the lesion. Note the several blood vessels with perivascular lymphocytic infiltration. Low power; hematoxylin-eosin stain.

as a dense network (fig. 5). Following still further toward the center of the lesion, there appeared a bluish-staining interfibrillar substance which was apparently homogeneous or finely granular. This material was thought to be mucin. Throughout this central region there were numerous irregular clear spaces giving the appearance of vacuoles.

There was a marked increase in the number of basic-staining nuclei especially toward the center of the lesions. When the fasciculae were distinct the nuclei were dark staining and interfascicular, but when the fascicular arrangement was lost, they stained less intensely and appeared to be lying free in the broken-up fibrillar structures. The shape of these nuclei varied. Some were spindle shaped, others semilunar, others oval and still others round.

It is interesting to note that the lesions were practically free from blood vessels or capillary network. The blood vessels outside the lesions showed a slight perivascular infiltration of lymphocytes. The sweat glands were apparently normal.

Preparations Stained with Pappenheim's Method: Pappenheim's stain was used to bring out cell structure and cell types. In the more normal areas the

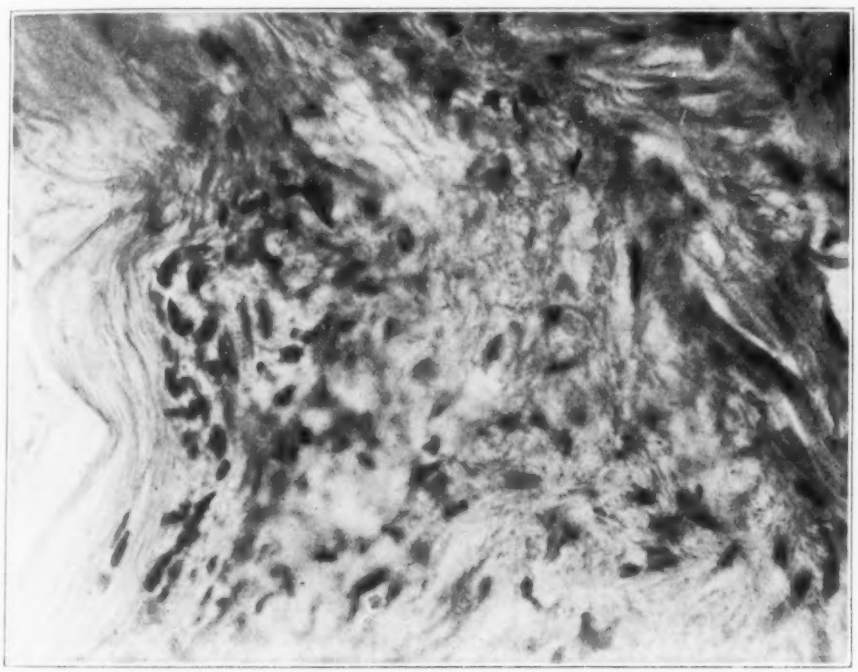

Fig. 5.—Swelling and splitting of the collagen bundles. High power; hematoxylin-eosin stain.

connective tissue did not stain. The nuclei were bluish red, spindle shaped and interfascicular and had a finely granular cytoplasm. In the more pathologic regions the connective tissue stained bluish pink, and the nuclei were many times more numerous. When the fascicular arrangement was present, they assumed an interfascicular position, but when the fasciculae were broken up, they were found lying free surrounded by fibrils and bluish-staining interfibrillar material. In these areas they no longer had the typical spindle shape but appeared to be club-shaped, semilunar, oval and roughly round (fig. 6). They were much larger and more reddish staining, and their cytoplasm was filled with vacuoles. In many of the nuclei one or more nucleoli were present. Many of the cells had terminal processes which extended into the homogeneous, bluish-staining intercellular material as fine, reddish fibers.

Preparations Stained with Weigert's Elastic Tissue Stain: With this stain, the yellow elastic fibers stained bluish black as contrasted with the bluish-violet stain of the normal collagen bundles and the grayish-violet of the swollen and broken up collagen bundles in the lesions. In the pathologic regions the elastic fibers were less numerous and took a much lighter and more purplish stain. Furthermore, they were broken up into short rods or spirals, some of which showed evidence of branching and anastomosing. Toward the center of the lesion these fragments of yellow elastic tissue were much thinner and appeared in places

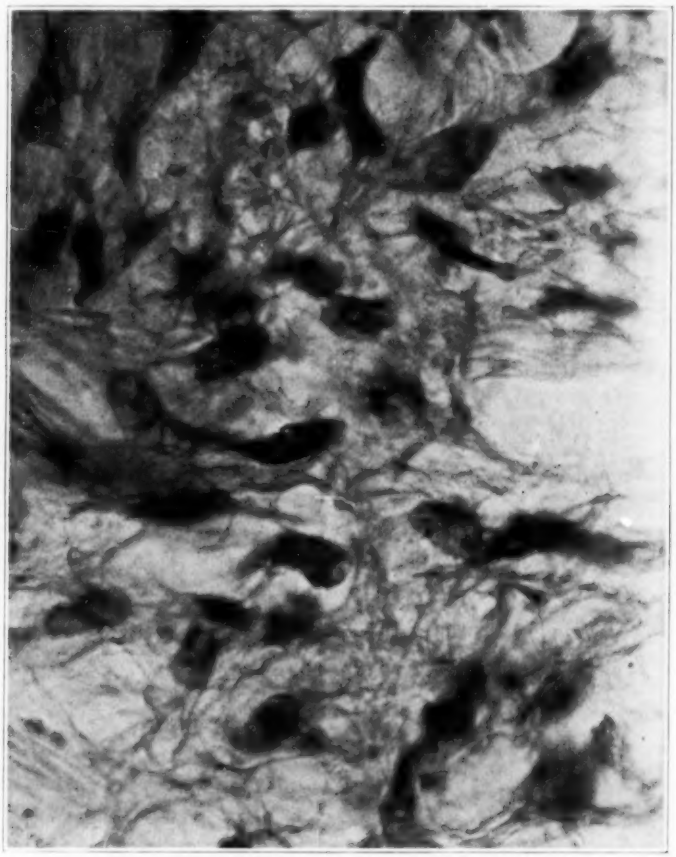

Fig. 6.—The type of cells found throughout the lesion. The intercelluiar substance is made up of fibrils and interfibrillar granular material. The latter with kresyl-echt-violett took a reddish tint, characteristic of mucin. In hematoxylin-eosin stain it also had the characteristics of mucin. With oil immersion there were definite vacuolar changes in the cells. High power; Pappenheim's stain.

as fine dark threads (fig. 7). In the very central portion of some of the lesions they were entirely absent.

Preparations Stained According to van Gieson's Method: With van Gieson's stain the central portion of the lesions stained pink, while the normal collagen bundles stained red. This color contrast brought out the discontinuity and fragmentation of the collagen bundles fairly clearly (fig. 8).

Sections Stained According to Perdrau's Method: Perdrau's connective tissue stain brought out more detail than was possible with the Weigert's elastic tissue stain. By this method the fine fibrils of the broken-up collagen bundles could be followed much further than with Weigert's elastic tissue stain or with van Gieson's stain.

Sections Stained with "Kresyl-Echt-Violett": This stain was used to demonstrate the presence of mucin. The connective tissue and cells stained blue, while the interfibrillar material stained pink.

Fig. 7.—The amount and distribution of the yellow elastic tissue. Note the broken up yellow elastic fibers throughout the lesion and the fine threadlike yellow elastic fibers in the central portion of the lesion. Low power; Weigert's elastic tissue stain.

SUMMARY OF CLINICAL AND PATHOLOGIC OBSERVATIONS

Clinically, the condition was a widespread, practically asymptomatic, noninflammatory, cutaneous involvement of long standing. It was characterized by an almost universal distribution of small dome-shaped lesions, from 1 to 2 mm. in diameter, which had a tendency to become

confluent and in many places arranged themselves in rows similar to a string of beads. The individual lesions were monomorphous, from white to light pink. They had a shiny surface and showed no scaling, pustulation or tendency to vesicle formation. The subjective symptoms were practically nil, with the exception of slight itching at times. There was a vague history of relapses and remissions.

The pathologic picture was essentially that of swelling and degeneration of the collagen bundles of the subpapillary layer of the corium. Associated with this was a degenerative change in the elastic tissue

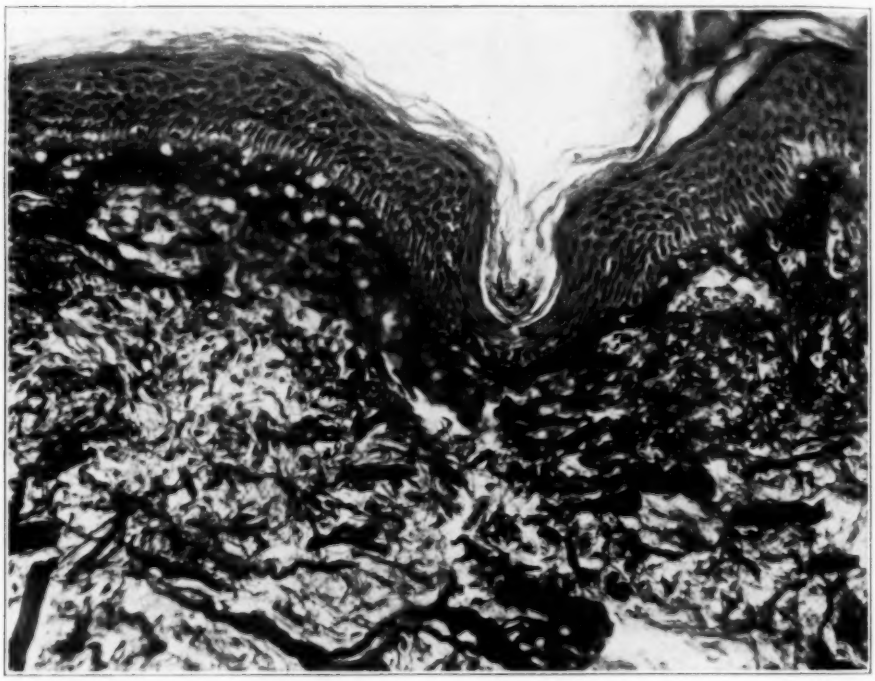

Fig. 8.—The collagen bundles appear dark. The section illustrates the fragmentation of the collagen bundles. Low power; van Gieson's stain.

characterized by a diminution in quantity and a thinning out and breaking up of the individual fibers.

The nuclei were markedly increased in number and showed various alterations in morphology and arrangement. These nuclei may have been part of the picture of a degenerative process or associated with a coincident proliferation. There was a notable absence of polymorphonuclear and lymphocytic infiltration within the lesions. There was, however, a slight perivascular infiltration of lymphocytes along the blood vessels outside of the lesions. The vascularity of the tissue was

markedly decreased. The observations mentioned make it appear that the process was not essentially an inflammation.

DIFFERENTIAL DIAGNOSIS

In discussing the differential diagnosis in this case, I feel justified in ruling out a group of inflammatory conditions, even though some of these inflammations show striking clinical resemblance, such as chronic urticaria, prurigo of Hebra, papular eczema, granuloma fungoides and moluscum contagiosum. The pathologic process of all of these conditions is characterized by a greater or lesser degree of cellular infiltration which was absent in the case presented.

Lichen Ruber Moniliformis.—This is essentially an inflammatory process, but its close clinical resemblance to this case entitles it to a more detailed consideration than the other inflammations. The clinical resemblance is particularly striking in the morphology of the individual lesions and in their moniliform arrangement. Also both of these conditions are long standing and run an almost asymptomatic course. I did not, however, find any evidence of polymorphism.[1]

The histologic picture of lichen ruber moniliformis as described and illustrated by Kaposi and discussed by Unna is characterized by cellular and nuclear infiltration of the subpapillary layer of the corium without any trace of organization or structure of the connective tissue. Giant cells were noted and illustrated, and also the lesions were decidedly vascular throughout.

In the sections there was marked increase in the nuclei but no evidence of inflammation or cellular infiltration, and no giant or plasma cells were found. Although the collagen bundles were swollen and broken up in my sections, there was not a complete loss of the structure of the connective tissue throughout the lesion. Furthermore, the decreased vascularity was a prominent feature in the sections, while Kaposi's illustrations show numerous blood vessels throughout.

Pseudoxanthoma Elasticum.—Throne and Goodman [2] have studied this subject exhaustively and have brought the literature up to date to 1921. I shall quote largely from their observations and their review of the literature. They described the lesions as round or oval, smooth, shiny papules, varying in size from that of a pinhead to that of a pea, which may be isolated, grouped or confluent plaques, or have linear formation. They also stated that the process may remain limited

1. In 1886, Kaposi described and pictured primary and secondary lesions occurring at the same time (Linchen ruber moniliformis, Arch. f. Dermat. u. Syph. **18**:571, 1886).

2. Throne, B., and Goodman, H.: Pseudoxanthoma Elasticum, Arch. Dermat. & Syph. **4**:419 (Oct.) 1921.

for years or increase in areas. There is either a total absence of subjective symptoms or only a mild itching. In my case, the almost universal distribution and the complete absence of yellow color are the only important points which are at variance with the clinical picture of pseudoxanthoma elasticum.

In the histologic picture, however, certain discrepancies are found. In the first place, the elastic tissue in my material was diminished in amount, and there was an almost total absence of elastic fibers in the center of the lesions. The elastic fibers themselves were actually smaller than in the normal skin. Practically all of the authors in describing pseudoxanthoma elasticum emphasize the predominance and swelling of the elastic fibers. The van Gieson stains did not show the yellow granular clumps of elacin described by Throne and Goodman.

In the second place, most of the authors described the collagen bundles as appearing normal or slightly swollen and degenerated, but for the most part they are described as normal in appearance and in staining reaction. In my material the collagen had apparently suffered the most.

Third, while several authors have noted a cellular and nuclear increase in the lesions, they do not emphasize the marked nuclear increase which I found to be such a prominent feature in my sections.

Finally, the presence of mucin, which was demonstrated in the sections stained with hematoxylin and eosin and kresyl-echt-violett, is not mentioned in the literature consulted on pseudoxanthoma elasticum.

Myxedema.—The clinical picture of myxedema shows practically no resemblance to the clinical picture in my case except for the fact that the patient was somewhat undersized. On the other hand, she showed practically none of the other stigmas of hypothyroidism. Sutton [3] described the condition of the skin in myxedema as dry, rough, yellowish and swollen without pitting on pressure. He also mentioned a more or less furfuraceous scaliness, and a diminution of sweat secretion.

The pathologic changes in myxedema, however, show a curious resemblance to those in my material. Several writers, chiefly Hun and Prudden,[4] Campana [5] and Mosler, mentioned the increase in mucin in this condition. Unna [6] mentioned the changes in the collagen as follows: "In my preparations, the collagen is distinctly less. There is certainly

3. Sutton, R. L.: Diseases of the Skin, ed. 7, St. Louis, C. V. Mosby Company, 1928.

4. Hun and Prudden: Myxoedema, Am. J. M. Sc. **96**:1, 1888.

5. Campana: Myxoedema, Clin. dermopat. e sifilopat. d. r. Univ. di Genova, 1883.

6. Unna, P. G.: The Histopathology of the Diseases of the Skin, New York, Macmillan & Company, 1896.

no firm collagenous frame-work in the cutis, but only a loose arrangement of fibers like basket-work." He also said: "The very much thickened papillary body consists of very fine collagenous fibers, which run in all directions, with distinct, apparently empty spaces between them."

Under differential diagnosis I have considered the diseases which show either clinical or pathologic similarity to the case I described. I felt justified in ruling out all inflammations on the basis of pathologic observations. As the collagen rather than the elastic tissue was primarily involved, and the elastic tissue was not increased in amount or swollen, I did not feel justified in considering the condition pseudoxanthoma elasticum. Myxedema shows the presence of mucin, according to some authors, and also an alteration in the collagen bundles, but the analogy is not complete. Briefly, I believe that the pathologic process in this case is essentially a degeneration of the collagen with associated fibroblastic proliferation (?).

CONCLUSIONS

1. Clinically, the condition was a chronic, noninflammatory, widespread, symptomless disease of the skin.

2. Histologically, there was swelling and degeneration of the collagen bundles of the subpapillary layer of the corium with an associated decrease in the size and number of the elastic fibers and an increase in the basic-standing nuclear elements.

3. A combined degeneration and proliferative process involving the subpapillary layer of the corium is probably being dealt with.

GENERALIZED LYMPHOGRANULOMATOSIS OF THE SKIN

REPORT OF A CASE IN A NEGRO *

JACK W. JONES, M.D.
AND
HERBERT S. ALDEN, M.D.
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The term lymphogranulomatosis is used to designate a clinical syndrome, characterized by a more or less systemic lymphadenosis of a specific histologic character. This disease process has been known more generally under the term "Hodgkin's disease," which, since the classic work of Dorothy Reed, is practically an entity in the American literature. Because the condition that Hodgkin originally described is common to various lymphadenoses, there has been a growing tendency to classify the specific lymphadenosis described by Reed [1] under the more comprehensive and descriptive term, lymphogranulomatosis.

Lymphogranulomatosis is primarily a chronic disease of the reticuloendothelial system, involving the lymph nodes, skin, lymphatics and spleen. The clinical symptoms are exceedingly varied, especially the skin manifestations. There is generally a firm and discrete enlargement of some part of the lymphatic system, usually the cervical or inguinal nodes. While the skin manifestations frequently precede the lymphatic enlargement, the diagnosis is seldom made until the appearance of these tumors. The skin lesions may vary from a simple pruritus to bullae or granulomatous-like ulcerations. In the majority of cases, localized subcutaneous lymphoid tumors are present and, fortunately, the more severe generalized types are rarely encountered. The blood picture varies but slightly from the normal. Frequently there is a definite eosinophilia or a slight lymphocytosis. Histologically, the process is made up of a diffuse cellular hyperplasia of proliferating endothelial cells, endothelial giant cells, plasma cells and eosinophilic leukocytes. While there are numerous variations in the proportion of the cellular elements, the typical picture of lymphogranulomatosis is unmistakable. Zeigler reported that 25 per cent of all cases of lymphogranulomatosis present some type of skin lesion. Miller [2] and Cole [3] reported 40 per cent respectively in their

* Submitted for publication, Jan. 31, 1929.

* From the Department of Dermatology, Emory University Medical School.

1. Reed: Bull. Johns Hopkins Hosp. **10**:133, 1902.

2. Miller, H. E.: Lymphogranulomatosis Cutis: Hodgkin's Disease, Arch. Dermat. & Syph. **17**:156 (Feb.) 1928.

3. Cole, H. N.: Cutaneous Manifestation of Hodgkin's Disease: Lymphogranulomatosis, J. A. M. A. **69**:341 (Aug. 4) 1917.

series of cases. Within recent years, the few cases reported of lymphadenosis with dermatologic aspects have borne out the opinion expressed by Arndt,[4] in 1914, namely, that many of the cases of pityriasis rubra of Hebra were in all probability lymphadenotic disease of the skin. While at present it seems hardly justifiable to cast aside this supposed clinical entity, a reclassification of the large group of generalized erythrodermias would seem wise.

Although the literature abounds in reported cases of lymphogranulomatosis, there have been no remarks as to its relative frequency in the negro race. Matas,[5] in his exhaustive study of the surgical peculiarities of the American negro, makes no mention of the disease. Since the opening of a separate negro division of the Grady Memorial Hospital in October, 1921, there have been 31,655 patients admitted to its wards. While many of these have been acute surgical cases, the general clinical material in the hospital and outpatient department is large and varied. During these seven years, only three cases of lymphogranulomatosis have been observed, either in the hospital or in the outpatient department. It is manifestly a rarity in the negro in this section of the United States. All three of these cases were diagnosed only after pathologic sections of the removed lymph node had been examined. One of the patients complained of a generalized pruritus but had no skin eruption. Another of the patients had no subjective symptoms other than the enlargement of the lymph node; the other case is herewith reported in detail.

REPORT OF CASE

History.—H. T., a mulatto boy, aged 18, was admitted to Grady Hospital on Nov. 19, 1928, complaining of a generalized itchy skin eruption and of physical underdevelopment. He was born and had lived all his life in a rural section of Alabama. No adequate history of any illness prior to his present condition could be obtained, and he was apparently a normal healthy child until the age of 11. At this age (October, 1917) he developed an intensely itchy rash about both ankles, considered at the time to be due to poison ivy. In spite of all treatment the eruption continued, extended and assumed a nodular (?) appearance. At the end of seven or eight months the condition had progressed and involved the hands, feet and legs, and later the face. The itching seemed intolerable, the patient gaining little or no rest. After the eruption on the hands and feet was established, large hard kernels appeared in the groin, under the arms and in the neck. These kernels had slowly become larger. The palms and soles became thickened and cracked, and the hair fell out in patches until the entire body was hairless except for a soft, downy growth on the scalp. Within recent years, the eruption had slowly progressed until the entire body was involved, the face becoming swollen and distorted. The constant scratching caused excoriation of the skin and infection ensued. No treatment instituted by various physicians seemed

4. Arndt, G.: Diseases and New Growths of Lymphatic Origin, J. A. M. A. **63**:1268 (Oct. 10) 1914.

5. Matas: The Surgical Peculiarities of the American Negro, Tr. South. Surg. A., 1896, p. 1.

to relieve the intense itching or to check the extension of the disease. In the past four years, there has been a slight abatement in the patient's general condition, the itching becoming less intense. The usual developmental changes of puberty were absent and there has been little or no growth since the age of 11 years.

The patient's father was living and in good health; his mother died of pulmonary tuberculosis when the patient was 5 years of age; two brothers and one

Fig. 1.—Appearance of patient in case reported.

sister were living; one brother died of mucous colitis at the age of 12 months. The patient was closely associated with his mother and grandmother, both of whom died of tuberculosis.

Examination.—The patient was a small, thin, underdeveloped negro boy, having a cretan-like appearance. He rolled and tossed in bed, scratching himself violently, but was conscious and rational. With the exception of a few small areas on the chest, the skin of the entire body was thickened and edematous, and a lack of

subcutaneous fat was evident. The skin lesions were for the most part closely placed papules, varying in size from that of a pinhead to that of a pea, the tops of which were weeping and scaling. Many areas were scratched and excoriated. There were a few soft but firm nodules, the size of walnuts, distributed over the arms, legs and sides of the abdomen. The ears, face and scalp were involved in an eczematous process which produced a facies leontina. The hands and feet, including the palms and soles, were markedly thickened and cracked, the hands assuming a clawlike appearance. The inguinal lymph nodes were enlarged to the size of walnuts and were firm, discrete and tender. The nodes in the axillae and neck were also enlarged, but were small and firmer. The left pupil was opaque, and there was a diffuse cortical opacity of the right eye. The teeth were carious, and there was marked pyorrhea. The tonsils were slightly enlarged and reddened. The ears appeared normal. On palpation, percussion and auscultation,

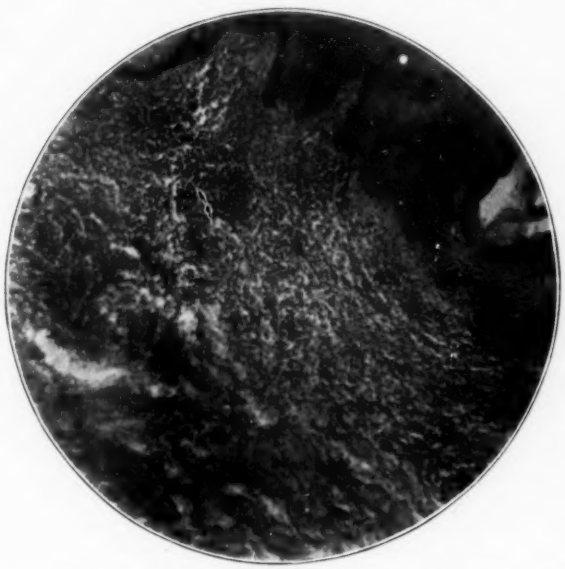

Fig. 2.—Section of skin. (From Steiner Clinic, Atlanta, Ga.)

the heart and lungs appeared normal. There was a pot-belly, and the liver dulness (?) extended below the costal margin, but neither the liver nor the spleen could be felt. The genitals were infantile. The extremities were held in a flexed position apparently because of the cracked and thickened elbows and knees. There was a diffuse cellulitis of the feet and ankles.

Laboratory examinations showed: hemoglobin, 80 per cent; red blood cells, 4,220,000; white blood cells, 33,350; polymorphonuclears, 38 per cent; small lymphocytes, 17 per cent; large lymphocytes, 4 per cent; eosinophils, 40 per cent, and transitional cells, 1 per cent. The blood sugar was 86.9 mg., nonprotein nitrogen, 30 mg. and creatinine, 1.5 mg. per hundred cubic centimeters of blood. The urine was normal; the phenolsulphonphthalein and concentration tests were within normal limits. Examinations of the sputum and stool revealed nothing abnormal, and the Wassermann reaction was negative. Roentgen examination of the bony skeleton showed an abnormally small pituitary fossa and general retarded bony growth. The mediastinum and chest appeared to be normal.

Histologic Examination.—Specimens of skin were removed from the abdomen and right leg for examination. The tissue was stained with hematoxylin and eosin. Both specimens showed the same pathologic process. The epidermis appeared normal. Just below the epidermis and in some areas extending into the papillae, there was a diffuse bandlike infiltration extending into the corium for a distance of about twice the depth of the epidermis. The blood vessels were dilated. The sebaceous glands appeared normal. On closer examination, the infiltration was composed of many cell types, but preponderantly was made up of lymphocytes and large mononuclear cells with small nuclei and a relatively abundant cytoplasm. Many fibroblasts were present, especially around the dilated vessels. A few eosinophils were present but no giant cells were seen.

A lymph node from the right inguinal region had somewhat the same histologic appearance. There was an increase in the connective tissue stroma. A general

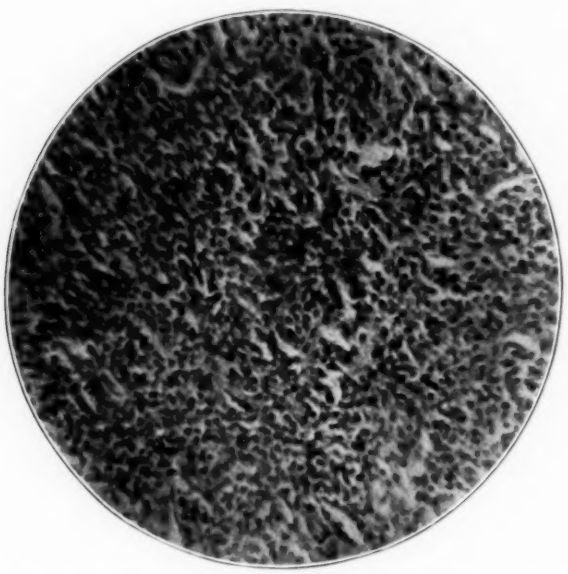

Fig. 3.—Section of lymph node. (From Steiner Clinic, Atlanta, Ga.)

increase in the size of the cells was noted and there were relatively few normal lymphocytes present. A few eosinophils were seen. The large mononuclear cells that were seen in skin sections were present in large numbers, and fibroblasts were scattered throughout.

The patient left the hospital before any type of treatment could be instituted.

COMMENT

A case of generalized lymphogranulomatosis in a negro boy has been reported. In this patient the generalized intense pruritic eruption, the lymphadenosis and the ultimate loss of hair occurring in a young person show the clinical similarity of this disease to pityriasis rubra (Hebra). The occurrence of lymphogranulomatosis in the negro is in itself unusual. Two of three cases observed in the negro over a period of seven years showed skin manifestations of the disease.

LUPUS ERYTHEMATOSUS WITH LEUKEMIC OBSERVATIONS

REPORT OF A CASE *

FREDERICK REHM SCHMIDT, M.D.
CHICAGO

Because of the hematologic and histologic evidence pointing to a diagnosis of leukemia, I am reporting a case of lupus erythematosus in which cure was obtained by intravenous injections of gold preparations.

History.—L. D., a man, aged 30, consulted me on May 16, 1928, concerning an eruption on the face of five months' duration. One year previously, a mass of tissue, the size of a walnut, had been removed from the region just posterior and contiguous to the right parotid gland. Several pathologists reported this excised tissue to be a lipoma. One month previous to the appearance of the lesions on the face, the patient had received an infection while operating on a patient with a pus infection of the kidney. This condition necessitated wide excision of the infected area on the right arm. Hemolytic streptococci were cultivated from this material and from the blood. The patient was a moderate smoker and did not indulge in narcotics. He had never contracted venereal disease.

The first lesion appeared in December, 1927, as a rose spot, the size of a pea, on the forehead. During the succeeding months, several more spots and streaks appeared on the cheeks. They caused no discomfort, except mild itching in one of the lesions. The patient said that the color of the lesions varied from day to day, so that at certain times the spots were hardly discernible. The patient felt well, had not lost weight, and his appetite was good.

Examination.—The patient was a well nourished and well developed man of about 30, who weighed 230 pounds (104.3 Kg.) and was 72¾ inches (184.7 cm.) tall. All observations were essentially negative. The liver was not enlarged and the spleen was not palpable.

Just superior to the right eyebrow on the forehead was a slightly elevated, soft, lavender area, the size of a dime. The color deepened under glass pressure. On the right cheek were scattered four nonelevated lavender streaks, each about 2 cm. long and 0.5 cm. wide, which almost disappeared on diascopy. The mouth was free from lesions. The remainder of the skin presented a normal appearance.

Laboratory Data.—On May 18, 1928, an examination of the blood revealed: hemoglobin, 90 per cent; red blood cells, 5,620,000, and white corpuscles, 13,100. In a differential count of 100 cells, there were 70 polymorphonuclear cells; 23 lymphocytes; 1 monocyte; 1 each of eosinophils and basophils, and 4 myelocytes. Thus, there was a marked shifting of the leukocyte count to the left. The urine gave a negative reaction for albumin and sugar. A roentgenologic examination of the chest was negative. Several blood cultures remained sterile after six days' incubation. The basal metabolic rate was —17. The Wassermann reaction

* Submitted for publication, Jan. 31, 1929.

of the blood was negative. On August 2, a chemical examination of the blood revealed 8 mg. of calcium per hundred cubic centimeters.

Histology.—The oldest lesion, that on the right eyebrow, was excised, stained and examined histologically. The epidermis was everywhere intact. A mild degree of acanthosis was present. In the cutis, especially in the subepithelial layer, there were circumscribed accumulations of lymphoid round cells, often arranged about sweat and sebaceous glands (fig. 1). These cells were large, possessed a dark-staining nucleus and were separated from each other by a fine network of connective tissue (fig. 2). An oxydase test was not made. A stain with resorcin-fuchsin after Pranter showed some clumping and fibrillation of the elastic tissue.

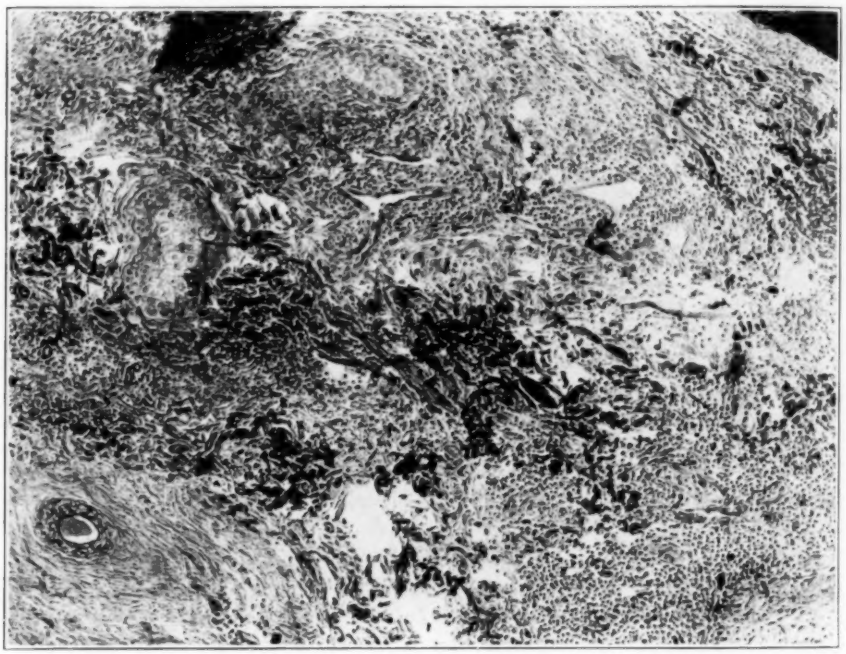

Fig. 1.—Infiltration of large cells, especially grouped around the sweat and sebaceous glands.

COMMENT

The patient presented several features which could lead to a diagnosis of myelogenous leukemia. In the first place, the atypical blood picture with the appearance of unripe myelogenous elements seemed conclusive evidence of leukemia. Coupled with this was the histologic picture. As in the cases reported by Zurhelle, Ketron and Gay, the large cells in the cutis were grouped around the sweat and sebaceous glands. The picture under the microscope resembled that seen in leukemia, and not at all that of lupus erythematosus.

Against the diagnosis of leukemia was the clinical aspect of the efflorescences. These were chiefly evanescent and were not nodular.

Furthermore, the almost daily variations in color indicated lupus erythematosus. To strengthen this conviction further, the fact that lymphadenopathy and megalosplenia were absent outweighed the laboratory evidence of leukemia.

A total of eighteen intravenous injections of a gold preparation were given at irregular intervals. There was no evidence of a focal reaction, but the lesions began to grow paler with the first injection. No evidence of the disease has been present for the last ten months, and the patient feels well.

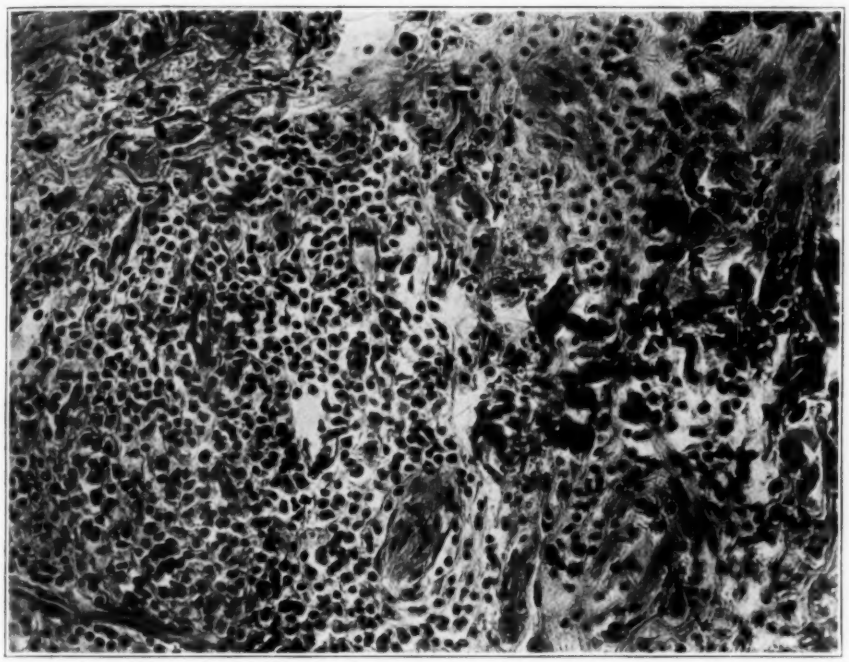

Fig. 2.—Characteristic area; high power magnification.

Considerable thyroid extract was administered orally until the basal metabolic rate was well within normal limits. A causal relationship between the hypofunction of the thyroid gland and this dermatosis is purely hypothetic, as is also that of a lymphocytosis and a calcium deficiency, both of which were present in this patient.

Myelocytes were not found in any of the later blood tests. These were made at monthly intervals, and the number of leukocytes dropped steadily until there were only 7,200 cells per cubic millimeter. On several occasions there was only 52 per cent of polymorphonuclear cells in a differential count, concomitant with a slight monocytosis.

Of interest is the rôle played by the infection of the arm prior to the appearance of the dermatosis. Possibly the hematopoietic organs

respond to the presence of streptococci by releasing early abnormal forms of blood elements. As the patient's leukemic state has apparently disappeared, such an altered physiologic condition may have been episodal and does not always eventuate in true generalized leukemia.

There are several facts to support the theory of the pathogenesis of leukemia on a septicemic basis. Therefore, is it purely hypothetical to conjecture that were the stimulus afforded by the streptococci to the hematopoietic organs continued longer or were the virulence greater, a generalized leukemia would result?

Since the etiology of lupus erythematosus has not been established, the septic condition in this patient causes me to adhere to the conception that this dermatosis is a cutaneous manifestation of septicemia, either tuberculous or pyogenic.

SUMMARY

A case of lupus erythematosus, in which the patient was cured by injections of gold preparations, presented an unusual hematologic and histologic picture. Myelocytes were present in the circulating blood, and their significance in septicemia is discussed.

TUBERCLE OF CARABELLI

ITS SIGNIFICANCE IN CONGENITAL SYPHILIS *

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NEW YORK

The tubercle of Carabelli, which was first described in 1844 by Dr. Georg Carabelli Edlen von Lunkaszprie, professor of dental surgery at the Academy of Petrograd, is a supernumerary tubercle found on the median side of the first permanent molars. During the past few years, there has been some discussion regarding the relationship of this malformation on the teeth to congenital syphilis. Sabouraud of Paris, Parounagian of New York, and Jane firmly believe that the tubercle of Carabelli is a stigma of congenital syphilis, of the same diagnostic importance as hutchinsonian notched teeth. Other observers, among whom may be mentioned Sprawson of London, Stokes of Philadelphia and Hazen of Washington, hold the opinion that this condition may also occur in nonsyphilitic persons; when it is found in persons having congenital syphilis, they believe it to be merely a coincidence.

While Hutchinson [1] regarded the notched malformation of the upper central incisors which bears his name as the most characteristic of the dental anomalies, he found it by no means invariably present in all patients with congenital syphilis. In viewing the entire question generally, he concluded that "syphilitic teeth are present probably in only a minority of those who are the subjects of inherited syphilis." In fact, he frequently found teeth of perfect development in those who suffered severely from the inherited taint, thus indicating that these so-called symptomatic observations are inconstant and unreliable. In his experience, certain characteristic dystrophies other than those of the teeth have been more commonly noted in the absence of dental malformations; again, other definite stigmas have seldom been seen except in the presence of one or more dystrophies of the teeth.

No diagnostic significance was imputed by Carabelli to the malformation described by him [2] in 1844; this extra cusp on the first permanent

* Submitted for publication, Feb. 11, 1929.

* Read at the Annual Meeting of the Medical Society of the State of New York, Albany, N. Y., May 23, 1928.

* Dr. Mihran B. Parounagian allowed me to use his clinical material.

* From the Department of Dermatology and Syphilology, New York Post-Graduate Medical School and Hospital, Service of Dr. George M. MacKee.

1. Hutchinson, Jonathan: Syphilis, New York, Funk & Wagnalls Company, 1913, p. 460.

2. Carabelli, Georg: Systematische Handbuch der Zahnheilkunde, Vienna, Braumüller and Seidel, 1844, vol. 2, p. 107.

molar he merely designated as "tuberculus anomalus." It was not until 1917, almost three quarters of a century later, that Sabouraud [3]—then unaware of the observations of Carabelli—associated the dystrophy with the condition of congenital syphilis. Noting the frequent occurrence of this extra tubercle simultaneously with numerous characteristic stigmas, he included this observation among those which he considered pathognomonic of congenital syphilis. According to Sabouraud,[4] it was A. Drance, a dentist, who, following the report of Sabouraud's article in 1917, informed him that his "protuberance mamillaire" was identical

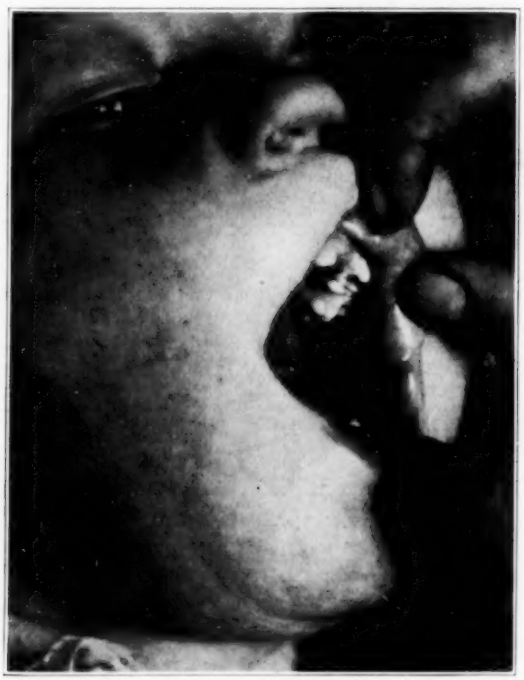

Fig. 1.—Tubercle of Carabelli in a patient proved to be congenitally syphilitic. Patient of Dr. M. B. Parounagian.

with the "tuberculus anomalus" previously described by Carabelli, and known as the tubercle of Carabelli; Sabouraud subsequently employed this nomenclature. Having found a positive serum reaction in twenty consecutive cases presenting this supernumerary cusp, the latter writer considered this malformation of sufficient diagnostic value to warrant antisyphilitic treatment.

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3. Sabouraud, R.: Sur un signe de dentaire de l'hérédo-syphilis, Presse méd. **25**:169 (March 22) 1917.

4. Sabouraud, R.: Entretiens dermatologiques, Paris, Masson & Cie, 1924, p. 211.

The publication of Sabouraud's theory and observations occasioned much controversy, and numerous articles have appeared in the literature, both in support and in refutation of his point of view. A study of these publications, however, can hardly fail to bring with it the impression of a misinterpretation, in certain instances, as to the exact nature of the tubercle of Carabelli referred to by Sabouraud. In fact, the latter has himself called attention to the similarity of this tubercle to the various cusps of Fournier's "mulberry molar," pointing out [3] that when this tubercle reaches the chewing surface, it presents a picture similar to that of the atrophic, multiple, irregular cusps of Fournier's "mulberry molar," with which it is apt to be confused.

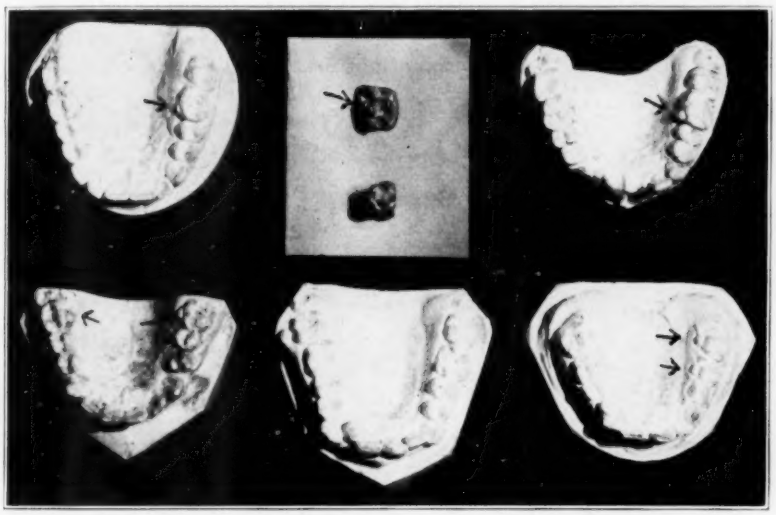

Fig. 2.—Tubercle of Carabelli on the first molars.

Emilio Jane [5] must be included among the strongest supporters of Sabouraud's dental sign as a characteristic stigma of congenital syphilis. Noting the confusion indicated in the literature through the misconception of this anomaly, he emphasized the salient characteristics as pointed out by Sabouraud. To be of diagnostic value, he stated, the tubercle of Carabelli must be considerably developed on the internal surface of the first upper molar; it must be implanted on the tooth, separated by an underlying fissure, like a mammillated eminence.

During the past five years, at meetings of the Manhattan Dermatological Society and of the skin section of the New York Academy of

5. Jane, Emilio: Valeur semeilogique de l'eminence mamillaire et du tubercle de Carabelli comme signe de la syphilis héréditaire, Ann. de dermat. et syph. **6**:734 (Dec.) 1925.

TABLE 1.—*Dr. Parounagian's Series of Thirty-One Patients in All of Whom the Tubercle of Carabelli was Present*

Case	Patient	Sex	Age, Years	Family History	Outstanding Symptoms
1	G. L. (private case)	Male	8	Father: gonorrhea, twenty-four years ago; Wassermann reaction 4 plus Mother: taboparesis; Wassermann reaction 4 plus on five occasions; sent to insane asylum Older brother: Wassermann reaction; dimness in both eyes, slight tubercle of Carabelli on both molars, high vault, other typical signs	Interstitial keratitis (vision very much impaired); Wassermann reaction 4 plus; well marked tubercle of Carabelli on both molars, high vault, imperfect hair line, protruding forehead
2	Mrs. M. M. (private case)	Female	23	Father: history of syphilis Son (aged 5): Wassermann negative; marked tubercle of Carabelli on both upper molars, high palate, imperfect hair line	Interstitial keratitis of both eyes; Wassermann reaction 4 plus; tubercle of Carabelli on both molars, in addition to other typical characteristics
3	F. V. (private case)	Male	23	Father: history of syphilis	Had chancre and secondaries previously; Wassermann reaction 4 plus; roentgen examination of chest revealed dilated aorta; tubercle of Carabelli on both molars
4	Mr. X.	Male	45	Father: treated for syphilis Mother: treated for syphilis Brother: inmate of insane asylum Wife: Wassermann reaction 4 plus Daughter: became violent; sent to insane asylum Son (aged 14): an imbecile; Wassermann reaction 4 plus	No signs of acquired syphilis; Wassermann reaction 4 plus; high vault, irregular hair line; tubercle absent, but a younger son of 12 years had tubercle of Carabelli on left molar
5	M. M. (Referred from Bellevue Hospital, Eye Department)	Female	6	Father: chancre eleven years previously; patient at Bellevue Clinic; Wassermann reaction 2 plus when admitted Mother: treated at Bellevue Clinic in 1912 and 1923; Wassermann reaction 4 plus	Interstitial keratitis; Wassermann reaction 4 plus on three occasions; marked mental symptoms; high vault, irregular and imperfect hair line, tubercle of Carabelli, other characteristic symptoms
6	A. G. (Referred from Cornell Clinic)	Female	21	Father: also patient at Bellevue Clinic with tabes dorsalis Mother: Wassermann reaction 4 plus; had large squamous patch on left arm of eighteen years' duration	Gumma of the great toe; Wassermann reaction 4 plus; has always been sickly, suffered from headaches, etc.; irregular and imperfect hair line, high vault, protruding forehead, tubercle of Carabelli
7	M. M.	Female	18	No history of parents obtainable	Interstitial keratitis; Wassermann reaction 4 plus; tubercle of Carabelli, irregular hair line, etc.
8	W. R.	Male	6	Father: Wassermann reaction negative Mother: Wassermann reaction 4 plus on several occasions; patient at Bellevue Clinic; had scar of gumma on left leg and forearm; several miscarriages	Interstitial keratitis; Wassermann reaction 4 plus; tubercle of Carabelli, peg-shaped teeth, high arch, irregular hair line
9	F. E.	Female	19	Parents: died fairly young, cause unknown	Interstitial keratitis; chronic iridocyclitis; Wassermann reaction 4 plus; tubercle of Carabelli on both molars, high vault, irregular and imperfect hair line

TABLE 1.—*Dr. Parounagian's Series of Thirty-One Patients in All of Whom the Tubercle of Carabelli was Present—Continued*

Case	Patient	Sex	Age, Years	Family History	Outstanding Symptoms
10	M. G. (Referred from Bellevue Hospital, Eye Dept.)	Female	10	Mother: under treatment at Health Department Father: died at age of 37	Keratitis; ulceration of nose; Wassermann reaction 4 plus; tubercle of Carabelli, high vault, irregular hair line, protruding forehead
11	J. M.	Female	9	Father: had syphilis fourteen years ago with Wassermann reaction 4 plus	Interstitial keratitis; white spots on both eyes for thirteen weeks; had five injections of arsphenamine and five of mercury; one previous Wassermann report not known; April 10, 1928, Wassermann reaction negative; scalp line poorly defined; moderate frontal bossae; tubercle of Carabelli
12	H. M.	Male	7	Mother: also a patient at Bellevue Syphilis Clinic; Wassermann reaction 4 plus; had one child and one stillbirth	Interstitial keratitis; very nervous; Wassermann reaction 4 plus on several occasions; tubercle of Carabelli, irregular hair line, high vault, protruding forehead
13	S. N.	Male	12	No history of parents obtainable	Interstitial keratitis; Wassermann reaction 4 plus on several occasions; tubercle of Carabelli, irregular hair line, high arch, protruding forehead
14	H. W.	Female	22	Father: died suddenly Mother: no history obtainable	Interstitial keratitis; patient had nervous breakdown, illusions; Wassermann reaction 4 plus
15	M. G.	Female	14	Mother: also a patient at Bellevue Syphilis Clinic, with paresis	Wassermann reaction negative; tubercle of Carabelli on both molars, irregular hair line, high vault
16	H. Q.	Female	12	Father: deserted Mother: dead Sister: a patient at Bellevue Clinic with gumma of leg; Wassermann reaction 4 plus	Wassermann reaction 4 plus repeatedly; tubercle of Carabelli, irregular hair line, high arch, protruding forehead
17	S. W.	Female	18	Father: negative for sypoilis Mother: rheumatic Sisters: three sisters well Brother: stomach trouble	Interstitial keratitis of eight years' duration; pupils reacted to light and in accommodation, dilated; right, slightly irregular; poor memory; knee reflexes much diminished; high arch, with depressed scar on roof; incisors with notch; atypical Hutchinson
18	C. Y.	Male	21	Parents in Germany; no history obtainable	Interstitial keratitis; denied venereal disease; Wassermann reaction 4 plus; tubercle of Carabelli; irregular hair line, high vault
19	S. M.	Male	12	No history of parents obtainable	Interstitial keratitis; Wassermann reaction 4 plus; tubercle of Carabelli, high arch, other characteristic symptoms
20	A. L.	.....	6	Mother: also a patient at Bellevue Syphilis Clinic, with history of having had tonsillitis; Wassermann reaction 4 plus	Keratitis; Wassermann reaction (Nov., 1923) 4 plus; (Dec., 1924) 2 plus; tubercle of Carabelli and other characteristic signs

TABLE 1.—*Dr. Parounagian's Series of Thirty-One Patients in All of Whom the Tubercle of Carabelli was Present—Continued*

Case	Patient	Sex	Age, Years	Family History	Outstanding Symptoms
21	Private case	Male	3	Mother: infected in early childhood; had been a patient of Dr. Parounagian more than ten years; Wassermann reaction positive; had also been treated for syphilis by the late Dr. Stelwagon of Philadelphia Father: Wassermann reaction negative	Child apparently in good health; Wassermann reaction negative; tubercles on both molars, high vault, irregular hair line, protruding forehead
22	P. E.	Male	16	Parents: history of infection	Occasional headaches and sore throat; throat congested; Wassermann reaction 4 plus on four occasions; tubercle of Carabelli and other signs, such as high arch
23	A. P.	Female	20	Father: history of infection	Patient married two and a half years; past history: three months' miscarriage; sent to clinic because pregnant; Wassermann reaction 2 plus; tubercle of Carabelli, high arch and irregular hair line
24	A. P.	Female	19	No family history obtainable	Interstitial keratitis; Wassermann reaction 4 plus; tubercle of Carabelli, high arch, irregular hair line, protruding forehead
25	J. G.	Male	14	No family history obtainable	Interstitial keratitis; Wassermann reaction 4 plus; tubercle of Carabelli, high vault and characteristic symptoms
26	T. C.	Male	34	No family history obtainable	Keratitis; chancre denied; Wassermann reaction 4 plus; tubercle of Carabelli, high arch, irregular hair line
27	M. T. (col.) (Referred from Eye Dept. Bellevue Hospital)	Female	22	No family history obtainable	Interstitial keratitis; patient married; two children, two miscarriages; Wassermann reaction 4 plus
28	V. L.	Female	11	Parents apparently well	Interstitial keratitis; tubercle of Carabelli, high arch, irregular hair line
29	K. H.	Male	?	Mother: under antisyphilitic treatment at Bellevue Syphilis Clinic; Wassermann reaction 4 plus Father: at present on Ward's Island; has been ill for eight months; in Neurological Hospital six weeks; Wassermann reaction 4 plus	Wassermann reaction negative for six weeks; tubercle of Carabelli, high vault, irregular hair line, protruding forehead
30	C. F. (Referred from Children's Court)	Male	14	Mother: treated for syphilis at New York Hospital	Child classified as "neglected child"; Wassermann reaction 4 plus; Hutchinson's teeth; tubercle of Carabelli on left molar
31	M. J.	Female	4	Mother: patient at Bellevue Syphilis Clinic for over two years; Wassermann reaction 4 plus Brother: has been getting treatment at Manhattan Eye and Ear Clinic	As child is too young for Bellevue Syphilis Clinic, no Wassermann report was obtainable; tubercle of Carabelli on both molars, high vault; irregular hair line; protruding forehead

Medicine, Parounagian has presented more than forty cases of congenital syphilis in which the tubercle of Carabelli was present, in addition to one or more diagnostic signs, such as a positive Wassermann reaction, a high vault, Hutchinson's incisors, irregular hair line, and protruding forehead. I have had the privilege of seeing a number of his patients and of presenting herewith a series of Dr. Parounagian's case reports (table 1). This series includes thirty-one patients, the majority of whom were treated at his syphilis clinic at Bellevue Hospital.

The term "tubercle of Mibelli" has been employed for the condition generally referred to as the "tubercle of Carabelli." Attention has since been called to this fact by Dr. E. W. Abramowitz.[6] He pointed out that Mibelli must have been a mere child at the time Carabelli's observation was published (1844) and that for this reason it appears evident that the "tubercle of Mibelli" is a misnomer. The main point at issue, however, is the coexistence of this special condition with other supposed stigmas—such as a high vault, an imperfect hair line, a protruding

TABLE 2.—*Results of Study of 100 Apparently Normal Children*

	Cases
Carabelli cusp absent	35
Carabelli cusp slightly marked	39
Carabelli cusp well marked	15
Carabelli cusp exceptionally well marked	11

forehead, hutchinsonian teeth—the particular appellation employed being of minor significance.

Parounagian [7] stated the belief that the occurrence of the tubercle of Carabell is an absolute diagnostic symptom of congenital syphilis. There are, however, a number of other writers who disagree with him. Among the more recent outstanding articles in which a negative view is expressed may be mentioned those of Sprawson (1922), Demole (1923), C. M. Smith (1923), Karnosh (1926), Quinlan (1927) and others.

To substantiate the theory that this anomaly occurs as frequently in nonsyphilitic as in congenitally syphilitic cases, Dr. Sprawson [8] selected 100 apparently normal children from an aggregate of several times that number. The results noted in these apparently healthy children are shown in table 2.

6. Abramowitz, E. W.: Tubercle of Carabelli in Congenital Syphilis, Arch. Dermat. & Syph. **17**:104 (Jan.) 1928.

7. Parounagian, Mihran: Presentation of Case: Tubercle of Mibelli, Arch. Dermat. & Syph. **16**:494 (Oct.) 1927.

8. Sprawson, Evelyn: On the Significance of the Extra Cusp Commonly Found on the Antero-Internal Aspect of the Maxillary First Permanent Molar in Man, Proc. Roy. Soc. Med., Sect. of Odontology **15**:72 (Sept.) 1922.

Further examinations, including the Wassermann test, of the sixty-five apparently healthy children who presented the tubercle of Carabelli seemed to Dr. Sprawson to be conclusive evidence that this particular tubercle is a rather frequent observation, in contrast to the infrequent occurrence of congenital syphilis. In fact, she stated that "in its incidence this cusp was found to be one of the commonest of the many variations from normal dentition which occur in man." In the majority of patients having the extra cusp on the first permanent molar, it was also found on the second maxillary molar. Its not uncommon occurrence in anthropoid apes is also pointed out by Dr. Sprawson. She quoted Mantoux [9] who, in 1918, in an examination of seven tuberculous soldiers presenting this extra cusp, found the Wassermann reaction to be negative in five cases. In addition, Mantoux referred to Mozar and Cheret, who observed negative Wassermann reactions in nineteen children, all of whom presented this extra cusp.

Demole [10] was of the opinion that of all the so-called dental stigmas, the tubercle of Carabelli is the most misleading. An examination of 428 recruits revealed 349 with normal dentition. The tubercle of Carabelli was noted in 20 per cent of the men who presented abnormal dentition. According to this author, Jeanselm found the Wassermann reaction to be negative in nine persons with a well defined tubercle of Carabelli, whereas Moser and Chenard noted the absence of the tubercle in a great many heredosyphilitic children.

C. Morton Smith [11] of Boston also stated that he found the tubercle as frequently in children who showed no sign of congenital syphilis as in those who presented definite evidence. According to him, the presence of this extra cusp on the six year molars has apparently no pathologic significance.

Stokes,[12] in a recent publication on syphilis, also took a negative point of view. He likened his experiences to those of Sprawson and Demole, who, in examining more than 500 children and adults, found nothing to support Sabouraud's claim. The obvious dystrophic tendencies of syphilitic teeth have, in Stokes' opinion, led to a multiplication of dental signs of heredosyphilis which he believes to be unjustified.

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9. Mantoux, C.: The Fifth Cusp and Hereditary Syphilis, Brit. J. Child Dis. **15**:123 (April-June) 1918.

10. Demole, V.: Le tubercle de Carabelli n'est pas un stigmate d'hérédosyphilis, Rev. méd. de la Suisse Rom. **43**:242 (April) 1923.

11. Smith, C. M.: Significant Dental Defects in Congenital Syphilis, Arch. Dermat. & Syph. **8**:791 (Dec.) 1923.

12. Stokes, J. H.: Modern Clinical Syphilology, Philadelphia, W. B. Saunders Company, 1926, p. 1036.

Following a chronological analysis of the first permanent molar, Karnosh [13] failed to support the theory held by Cavarello,[14] Stein [15] and other investigators, that syphilis of the teeth is active during the latter part of intra-uterine and early extra-uterine life. "On the contrary," he stated, "it seems to demonstrate that the tooth-forming organs are not seriously impaired in utero and that most of the deciduous teeth as well as the prenatal caps of the first permanent molars are fairly well formed, in spite of the presence of active syphilis in the fetus." Karnosh was inclined to trace the cuspal hypoplasia to defects in the various layers of enamel occurring, for the most part, after birth. According to Karnosh, a number of workers have attempted to apply a table of dentification, instead of one of enamelization, in the interpretation of hypoplastic deformities. Regarding the tubercle of Carabelli, he concluded that it is formed "by the buckling or telescoping of normal enamel layers over dwarfed and hypoplastic formations." He believed that "while it may be a common feature of the syphilitic molar, the structure can be found in any severe hypoplasia of the first year layers."

More recently, Quinlan,[16] in a review of the dental signs of congenital syphilis, included a study of the teeth in fifty patients known to be congenitally syphilitic. These were cases in the clinic of Dr. Jay F. Schamberg for congenital syphilis, at the Graduate School of Medicine of the University of Pennsylvania. These patients ranged in age from 5 weeks to 16 years, and included thirty females and twenty males. Only three of the fifty patients presented the tubercle of Carabelli. Quinlan stated the belief that, on the whole, evidence as to the diagnostic significance of this tubercle is still lacking.

SUMMARY AND CONCLUSIONS

The divergence of opinion as to the value of this malformation in the diagnosis of congenital syphilis must be evident from the data presented in this article. Divergent views are also held by numerous other experienced clinicians with whom I have discussed the frequency and possible diagnostic importance of the tubercle of Carabelli. I firmly agree with those who view the question negatively, basing my opinion on the following acknowledged facts:

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13. Karnosh, L. J.: Histopathology of Syphilitic Hypoplasia of the Teeth, Arch. Dermat. & Syph. **13**:25 (Jan.) 1926.

14. Cavarello, Joseph: Syphilis in Relation to Dentition, Dental Cosmos **50**: 11, 1908-1909; **51**:1, 1908-1909.

15. Stein, J. B.: Dental Stigmata of Hereditary Syphilis, Dental Cosmos **55**: 695, 1913.

16. Quinlan, R. V.: The Teeth in Cases of Congenital Syphilis: Roentgen-Ray Studies of Unerupted Teeth, Arch. Dermat. & Syph. **16**:605 (Nov.) 1927.

1. The tubercle of Carabelli is frequently absent in patients acknowledged to be congenitally syphilitic.

2. This malformation is frequently present in persons who are not congenitally syphilitic.

On the basis of the evidence presented, it seems impossible to regard this anomaly as a positive and reliable means of diagnosis.

Few conditions, if any, are as elusive as syphilis, and while in one's enthusiasm one constantly strives to add to the list of definite stigmas, it is likely that the following words, written by Hutchinson [17] about fifteen years ago, apply as well today as they did then.

> There exists a class of patients in whom, in spite of modern development of diagnosis, the recognition of inherited taint is still a matter of great difficulty, perhaps impossible. However large this class may be we cannot tell. Probably it is not a large one. We must, however, be prepared to encounter now and then manifestations of inherited syphilis in those who do not show a single corroborative feature.

100 West Fifty-Ninth Street.

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17. Hutchinson (footnote 1, page 461).

Abstracts from Current Literature

RINGWORM OF THE FEET. R. T. LEGGE, LEE BONAR and H. J. TEMPLETON, J. A. M. A. **92**:1507 (May 4) 1929.

This is a short preliminary report of what the authors consider one of the problems of major importance in public health work. They have found ringworm of the feet in 67 per cent of their University students. Of the cases which were diagnosed clinically, 90 per cent were proved by microscopic examination. Of especial interest were the results of a questionnaire sent to thirty-nine college physicians to determine the prevalence and importance of ringworm infection among students. It was found that more than half the physicians were not interested in the subject and had little or no knowledge of it. It is the judgment of the authors that this is due in part to inadequate facilities in our schools for the study of fungi pathogenic in man.

FEVER INDUCED BY BACTERIAL PROTEINS IN THE TREATMENT OF SYPHILIS. JAROLD E. KEMP and JOHN H. STOKES, J. A. M. A. **92**:1737 (May 25) 1929.

Sixty-five patients with different types of syphilis were treated with typhoid-paratyphoid vaccine. The number studied in each group was too small to allow definite conclusions to be drawn. With proper precautions it is a safe and controllable form of fever therapy. Cardiac disease is an absolute contraindication to this form of treatment. Primary and secondary lesions underwent involution with fever therapy, but the method is inferior to arsphenamine. Fever therapy combined with the arsenicals and bismuth produced results which offered a promising therapeutic outlook. This was especially true in cases of neurosyphilis. The technic is described in detail and there is a brief critical review of the literature.

RATTNER, Chicago.

ALOPECIA AREATA ASSOCIATED WITH FRONTAL SINUS DISEASE. NORMAN BURGESS, Brit. M. J. **1**:901 (May 18) 1929.

In the case reported, there was a single patch of alopecia areata in the left temporal region. The sinusitis was right-sided. This would tend to support Wright's view that the theory of reflex irritation as a cause of alopecia areata is untenable. The author believed that the focal infection per se was responsible for the disease.

KAPOSI'S IDIOPATHIC SARCOMA IS NOT A GENUINE SARCOMA BUT A NEUROVASCULAR DYSGENESIS. L. M. PAUTRIER and A. DISS, Brit. J. Dermat. **41**: 93 (March) 1929.

Pautrier and Diss present the results of a histologic investigation of a case of Kaposi's idiopathic sarcoma in an Irakian medical student of Persian origin, aged 22 years. The authors give a brief review of the varied opinions about this disease and comment on the fact that the tendency to consider the condition a sarcoma is waning. They note the constancy and importance of the vascular lesions and abundant pigment derived from the blood and comment on the reference of three authors to nervous lesions. A detailed clinical record of the case is presented with three photographs illustrating the lesions on the feet and four photomicrographs illustrating salient points in the histopathology. The commencement of the lesions as hypodermic nodules is particularly stressed. The formation of these nodules may be heralded by painful phenomena; their importance and diagnostic value, the authors think, has not been sufficiently pointed out. A considerable difference between the local temperature of the skin over the lesions and of the surrounding sound skin is emphasized, the affected areas exhibiting an increase

of 5 C. (9 F.) in temperature. The authors feel that clinically an analysis of the facts leads to the conception of the anatomicophysiologic substratum of the lesions as vascular and nervous lesions. It is this association of vascular and nervous lesions that the authors bring out in their histologic examination, a detailed report of which accompanies the article. On the basis of their histologic observations they reject the theory of a purely inflammatory lesion. They also feel that the condition cannot be a sarcoma since there are no tumor cells, but instead elements of connective tissue in a state of proliferation—vessels with simple walls, vessels with a neuromuscular sheath and a network of nerve fibrils, proliferation of Schwann's cells and formation of touch corpuscles of the Wagner-Meissner type. They feel that these lesions present a dysgenesis of the vessels and their neuromuscular annexes on one side, and of their Schwannian elements on the other. The pseudosarcomatosis of Kaposi, which has nothing to do with sarcoma, therefore appears to stand in the same relation to the vascular system as does von Recklinghausen's disease to the nervous tissue.

THE STOCKING ERYTHRODERMIA: A CLINICAL ENTITY. L. HARTSTON, Brit. J. Dermat. **41**:105 (March) 1929.

Hartston presents the clinical record of sixteen cases in which there was involvement of the forearms or legs, or of both, by a red, scaling, often moist and abraded condition which has the sharply defined limits never met with in any other dermatologic condition and which is strikingly like the hysterical "glove and stocking" anesthesias, to which it is strictly analogous. The eruption never extends down beyond the dorsum of the foot nor above a line just below the patella. When it occurs on the upper limb, it is limited to the area below the elbow joint and usually to that above the wrist. In eleven cases, representing the author's series, the condition occurred in one leg only in five cases, in both legs in six cases and in both forearms and legs in five cases. Scarring never occurs as a sequel, the general health of the patient is unimpaired throughout, and bacteriologic study in long continued cases reveals only the normal cutaneous flora. Although trauma and mental shock have been mentioned as etiologic factors, Hartston feels that the actual primary etiology of the stocking erythrodermia evolves itself into a faulty adjustment of the patient to his mental difficulties. These patients present a characteristic appearance; they are constitutionally neurotic and have the typical facies by which they may be distinguished. He comments on the fact that these patients seldom show pleasure at improvement in their condition. The preponderance of cases in males was striking, only one in a female being seen. Treatment is directed toward breaking the habit of rubbing and scratching through the employment of sedatives, bland lotions locally, fractional roentgen exposures and the application of occlusive dressings. He feels that the condition is entitled to recognition as a clinical entity of purely neurotic origin. Six photographs accompany the article.

COCCIDIODAL GRANULOMA: REPORT OF A CASE. J. F. BURGESS, Brit. J. Dermat. **41**:145 (April) 1929.

A Russian man, aged 33, who had lived in Montreal for eight years, had furuncle-like lesions on the left hand and forearm. Numerous sinuses were present in all the lesions, with exudation of a serosanguinous pus. The lesions on the arm showed fairly extensive scarring as evidence of an attempt to heal spontaneously. The patient also presented a positive Wassermann reaction. A fungus, coccidiodal in type, was found which was pathogenic in mice; growth on mediums, however, was not obtained. A clinical cure followed potassium iodide therapy. The author considers that this is the first case occurring in Canada; he thinks that the disease was probably transmitted through handling fresh vegetables from California, and was probably acquired in the course of the patient's occupation as a cook's helper. A colored photograph of the affected hand, two illustrations of the fungus, a histologic report and three photomicrographs accompany the article.

ON A FORM OF CHRONIC PYODERMIA. J. F. SMITH, Brit. J. Dermat. **41**:149 (April) 1929.

Smith presents reports of chronic pyodermia occurring in two men, aged 51 and 34, respectively, and in a woman, aged 67. Histologic studies of two of the cases and photomicrographs accompany the article. The author feels that the cases conform either to the type of chronic pyodermia described by E. Hoffman as "pyodermia chronica papillaris et exulcerans" or to that named by Tischnenko and Kroiczik "pyodermia chronica serpiginosa." Their probable etiology is pyogenic infection plus allergy.

AN UNUSUAL ERUPTION IN CONGENITAL SYPHILIS. C. RASCH, Brit. J. Dermat. **41**:155 (April) 1929.

Rasch comments on the occurrence of a special form of syphilitic eruption in children with congenital syphilis, and the diffuse infiltration of the skin, first observed by Trousseau and Lasègue in 1847. He presents a report of two cases that seem to form a variety of this disease not previously described. A boy, aged 1½ months, presented a pale reddish-brown eruption on all four limbs, on the nates and on the head and soles, that occurred as round, elongated and band-shaped, slightly infiltrated plaques which coalesced into irregular reticular lesions. This eruption was preceded by an extensive red dermatitis on the nates. The Wassermann reaction was positive. Fluid exuding from a punctured lesion on the leg revealed spirochetes. The eruption disappeared with antisyphilitic treatment although the Wassermann reaction remained positive. An infant, aged 2 months, who died two days after admittance to the hospital, presented the eruption on all the extremities. Red, desquamating plaques were noted on both palms; the soles were not affected. Tissue fluid revealed *Spirochaeta pallida*. Rasch feels that the condition is associated with the cutaneous veins, especially the second venous plexus, and may represent the first stage of the diffuse infiltration of the skin.

WIEN, Chicago.

POISONING BY THALLIUM ACETATE. Brit. M. J. **1**:712 (April 13) 1929.

A London coroner's jury returned a verdict of death from poison accidentally administered in the case of three brothers, aged, 10, 7 and 5 years, respectively, who had been treated for ringworm of the scalp by the internal administration of thallium acetate at a hospital.

The value of this drug in the treatment of tinea capitis, based on its property of producing a total, though temporary, alopecia, was first recognized early in the present century by Sabouraud, but it was not until 1918, when Prof. R. E. Cicero discovered that by carefully assessing its dosage in terms of body weight he was able to prevent the severe toxic symptoms occasionally attending its administration, that the employment of thallium acetate became at all general. The dose recommended by Cicero, of 8 mg. per kilogram of body weight with a maximal dose for any patient, however heavy, of 0.3 Gm., has been found by dermatologists generally to produce satisfactory results. It is clear from the evidence at the inquest that the doses actually ordered for the three boys fell well within these limits. On chemical analysis, however, it was found that each dose of the solution administered contained from five to six times as much thallium acetate as was ordered in the prescription, a blunder which arose not from any carelessness in the actual dispensing, but from the fact that the hospital pharmacist had made a mathematical error in converting the amounts of the prescription from the metric to the apothecaries' measure.

RATTNER, Chicago.

VERRUCA OF THE MESIAL PORTION OF THE DORSUM OF THE TONGUE. C. AUDRY, Ann. de dermat. et syph. **10**:229 (March) 1929.

Audry describes three cases in which round, slightly vegetating, isolated lesions were present on the middle of the dorsum of the tongue. Biopsy showed them to be verruca. Each patient had common warts on the hands.

ALEURIES AND FUSEAUX IN CULTURES OF ACHORION SCHOENLEINII. R. SABOURAUD and P. NEGRONI, Ann. de dermat. et syph. **10**:232 (March) 1929.

Sabouraud reports the finding of definite organs of fructification (aleuries and fuseaux) in cultures of *Achorion schoenleinii*. The cultures had been grown for about seven months before the appearance of these organs. These results support the contention of Sabouraud that the distinction based on the presence or absence of organs of fructification in culture is artificial.

THE DERMATOPHYTES. IV. MEMOIR. R. SABOURAUD, Ann. de dermat. et syph. **10**:236 (March) 1929.

Sabouraud recalls his recent note on the divergence between mycologists and dermatologists as to the classification of dermatophytes. He explains the difference in point of view on the basis that mycologists never study the lesion or the natural relations of the parasites, while dermatologists consider the lesion as well as natural and artificial conditions of growth. He thinks that a simpler classification could be wrought in the *Trichophyton* group. *Microsporons* and *Endothrix* families are distinct. The group of *Micrioides* is not so easily differentiated. The *Megarospores* are well differentiated. There are, therefore, five categories of parasites that invade the hair, namely, *Achorion, Microsporum, Endothrix, Micrioides* and *Megarospore.*

Sabouraud regards *Endothrix, Micrioides* and *Megarospore* as true botanical families because (1) the invasion of the hairs is specific for each parasite, (2) this tableau is uniform in each case, (3) cultural studies verify the microscopic examination and (4) animal inoculation reveals the same type of invasion as that in human hairs.

ACRODERMATITIS CHRONICA ATROPHICANS WITH A VERTEBRAL NEOPLASM. E. HERMAN, Ann. de dermat. et syph. **10**:246 (March) 1929.

Several unusual features were present in a case which is reported in detail. Among these were the onset of the disease on the upper extremities, the development of new areas of the disease as late as fifteen years after the onset; lesions on the soles, the presence of giant cells and definite sympathicotonus. Neurologic examination demonstrated a tumor of the first lumbar vertebra, verified by roentgen study. This tumor was probably nonmalignant. There is no comment on its relation to the cutaneous picture.

ROENTGEN STUDY OF THE ELIMINATION OF BISMUTH PREPARATIONS. H. MONTLAUR, Ann. de dermat. et syph. **10**:259 (March) 1929.

The author produces roentgenograms showing the retention of insoluble bismuth salts from three to four months after injection. His study also shows that water soluble preparations remain for a short time in the state in which they were injected but soon are disassociated and precipitated. The author's studies on the new oil soluble bismuth compounds are incomplete, though his roentgenograms show retention of the preparations for at least ten days.

A SEASONAL BULLOUS ERUPTION. V. GENNER, Ann. de dermat. et syph. **10**:269 (March) 1929.

The eruption seems not to have been described previously. Several patients had a bullous eruption chiefly on the legs. The lesions appeared overnight. All cases occurred in the fall. The cause seemed to have been an insect sting.

THE ABORTIVE TREATMENT OF SYPHILIS. W. FELDMANN, Ann. de dermat. et syph. **10**:275 (March) 1929.

A questionnaire was sent to many authorities and the replies were catalogued. The article is unsuitable for a brief abstract but brings out distinctly the diversity of opinion on this subject.

MICHAEL, Houston, Tex.

SMOOTH CULTURES OF DERMATOPHYTES. V. MEMOIR. R. SABOURAUD, Ann. de dermat. et syph. **10**:345 (April) 1929.

From the standpoint of classification the dermatophytes giving smooth cultures have been a source of contention between dermatologists and mycologists. They do not produce aerial hyphae or differentiated organs of fructification. One type shows mycelia penetrating the media (*E. violaceum*), while others reveal only filaments with short articles (*Achorion schoenleinii, M. ochraceum).* Mycologists have always tended to classify the dermatophytes with smooth cultures as a special family, but, dermatologists, including Sabouraud, believe that this is incorrect. They base their belief in the family unity of all dermatophytes on the behavior and microscopic appearance of the parasites in their natural habitat, namely, the skin or its appendages.

Sabouraud says that the reason for the relatively undeveloped cultures of the glabrous group is that they are unadapted to artificial media. He tried to cause these organisms to grow more abundantly by varying the media. Only recently has he succeeded (with Negroni) in showing that after seven months' cultivation in honey media *Achorion schoenleinii* produces differentiated organs of fructification. He thinks that dermatophytes producing glabrous cultures are varieties that have lost their power to fructify in the ordinary way, because of long parasitic existence.

ELEPHANTIASIS VULVAE. J. GATE and J. ROUSSET, Ann. de dermat. et syph. **10**: 354 (April) 1929.

The authors believe that there are two clinical varieties of this disorder: (1) that described by Huguier under the name esthiomene, in which the hypertrophy appears secondary to a chronic ulcer of the vulva, and (2) that in which the hypertrophy is primary. Etiologically, several infections (filariasis, streptococcus, tuberculosis and syphilis) are responsible.

A woman, aged 33, had a genital chancre four years previously. She had received a moderate amount of antisyphilitic treatment. She presented marked vulval elephantiasis with several ulcerations on the tumefied parts. Syphilitic treatment produced definite improvement. This is contrary to the usual experience in this malady.

CHRYSOPHANIC ACID AND CHRYSAROBIN. R. HUERRE, Ann. de dermat. et syph. **10**:364 (April) 1929.

The author, a pharmaceutical chemist, studied these substances as to their chemistry and pharmacology and reached the conclusion that pure chrysarobin is a mixture of anthranols and the anthraquinones which are present in commercial chrysarobin and which are irritating and without therapeutic effect. They may be removed by treating chrysarobin with potash solutions. The best solvent is chloroform. Chrysophanic acid depends for its therapeutic effect on its contained chrysarobin. It should be dropped from the list of drugs.

TUBERCULOUS SUPERINFECTIONS OF THE SKIN. P. ROCHAT, Ann. de dermat. et syph. **10**:369 (April) 1929.

The author reports the tuberculous inoculation of the vulva from a sexual partner who had tuberculous epididymitis. The woman, however, had "burnt-out" pulmonary tuberculosis. It was therefore an instance of superinfection comparable to that which occurs in syphilis.

EPILEPTIFORM PSYCHOSIS AFTER THALLIUM ACETATE. M. BACHKEVITCH and A. PROKOPTCHOUK, Ann. de dermat. et syph. **10**:383 (April) 1929.

A case is reported in which epileptiform attacks developed twenty-six days after the administration of thallium acetate for epilation. The dose was 0.008 Gm. per kilogram. The patient was 20 years of age and had favus. The authors investigated the effect of thallium on the nerve tissues of guinea-pigs and cats. In the

dose of 8 mg. per kilogram it produced edema and petechial hemorrhages in the brain or spinal cord.

MYCOTIC SYNDROMES OF THE SKIN. L. GRIGORAKIS, Ann. de dermat. et syph. **10**:387 (April) 1929.

Grigorakis defends his recently proposed classification of the dermatophytes against the criticisms of Sabouraud.

MICHAEL, Houston, Tex.

TREATMENT FOR LEPROSY WITH TELLURIUM. R. STANZIALE, Riforma med. **44**:1652 (Dec. 17) 1928.

Five patients with leprosy improved markedly when treated with injections of tellurium iodide in oil suspension, with metallic tellurium in dextrose serum and with iodotellurate of quinine. The author thinks that these drugs should be employed in leprosy with a view to establishing definitely their true therapeutic value.

A CASE OF FAVIDE. A. VERSARI, Riforma med. **45**:78 (Jan. 19) 1929.

A case of favus of the scalp presented erythematosquamous and papular lesions disseminated over the trunk and arms. Tineatoxin was injected subcutaneously every four days. After five injections all the cutaneous lesions had disappeared. The scalp was depilated with x-rays. No local treatment was used. *Achorion schoenleinii* was isolated from the crusts on the scalp, but no fungi could be recovered from the surface of the skin or from the blood.

RHINOSCLEROMA IN CENTRAL AMERICA. A. PEÑA CHAVARRIA and E. G. NAUCK, Rev. méd. latino-am. **14**:477 (Feb.) 1929.

Rhinoscleroma is a common condition among the native indians of Central America, especially in the high and cold regions. In Costa Rica where there are practically no Indians and the white race is pure, the condition is rare. The authors report two personal observations of this disease in which the combined treatment with x-rays and intravenous injections of tartar emetic were efficacious. They found Frisch's bacilli in both cases.

PARDO-CASTELLO, Havana.

DERMATOLOGIC ABSTRACTS

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

CARBOLIZED SCALPEL AND POSTOPERATIVE ILEUS. A. L. SORESI, Am. J. Surg. **6**:405 (April) 1929.

Soresi stresses the fact that even deep tissues, such as the pleura and the pouch of Douglas, can be painlessly incised with a sharp scalpel, previously dipped in pure phenol. The point of the back of the scalpel is passed over the intended line of incision, so as to mark it with the phenol. A few seconds later the scalpel is dipped again in the phenol and the tissues are incised very slowly and gently, the scalpel being moved up and down as in cutting with a saw. When blood appears, a sponge or blunt retractors are applied to the tissues, if necessary. The scalpel is dipped in pure phenol as often as required. The repeated dippings of the scalpel in phenol are required in order to deposit on the blade a film of phenol, which, coming in contact with the tissues as they are cut, anesthetizes them. This film is rubbed off by the tissues or washed off by the blood through which the blade passes, and therefore has to be renewed as often as necessary, according to the depth of the tissues to be incised. In order to prevent burning of the skin surrounding the incision, either during or immediately after the incision is made, the skin is

swabbed with a sponge soaked with alcohol. The incision should always be very small; a large incision is never necessary. Painless and self-draining incisions are obtained with the phenolized scalpel. When a collection of pus is present, the pus will ooze out through the open wound without the help of any means of drainage. The phenolized scalpel is the ideal method of treatment for collections of pus. No drain is ever necessary. The method has been used by the author for the last twelve years in thousands of cases, always with complete satisfaction.

SYPHILIS WITHOUT CHANCRE AFTER BLOOD TRANSFUSION. E. CONSTANTINESCOU and N. VATAMANU, Ann. de mal. vén. **24**:161 (March) 1929.

Constantinescou and Vatamanu report a case of generalized papular and erosive syphilitic skin eruption and tonsillar and vulvar syphilids in a woman, aged 42. The eruption was not preceded by a chancre and appeared seventy-five days after a blood transfusion which the patient had had for acute anemia caused by metrorrhagia. The Wassermann reaction of the donor's blood was positive, and the donor had had a mixed chancre at the time of the transfusion, but he did not know that the condition was syphilitic. The husband of the woman did not have syphilis.

"FLAT TONGUE" IN CONGENITAL SYPHILIS. C. ROCHE, Marseille méd. **66**:287 (Feb. 25) 1929.

Under the term "flat tongue," Roche describes a condition caused by paralysis of the transverse lingual muscles: the patient cannot raise the lateral edges of the tongue to form a roll; the other movements of the tongue, however, are normal. The author observed this condition in nine out of ten patients with congenital syphilis who were treated by him for interstitial keratitis. In patients with acquired syphilis the condition was observed occasionally in the late period of the disease. The author thinks that flat tongue is as valuable a sign of congenital syphilis as are Hutchinson's teeth and interstitial keratitis.

FACIAL PARALYSIS IN HERPES ZOSTER. J. MATUSEVICH, Semana méd. **36**:522 (Feb. 28) 1929.

Matusevich's patient, aged 38, presented a peripheral facial paralysis, vesicular rash and auditory disturbances. A diagnosis of herpes zoster was made. The facial paralysis appears either several days after the rash or accompanies it; when total, it lasts from three to six months. The prognosis is good, since after effects are not common. The treatment consists of rest (while subjective and skin manifestations persist), local application of siccative and sedative ointments and dusting with inert powders. In order to relieve the pain, acetylsalicylic acid, quinine or acetphenetedin may be given. Electrotherapy is dangerous because it may cause spasms.

SYPHILITIC ANEMIA IN EARLY CHILDHOOD. A. CASAUBON and J. DELUCCHI, Semana méd. **36**:582 (March 7) 1929.

Casaubón and Delucchi studied three cases of syphilitic anemia. One patient was aged 6 weeks and two were aged 2 years. All three patients had marked anemia and rickets. The syphilitic etiology was proved by a positive Wassermann reaction either of the child or of the father. The good results obtained with antisyphilitic therapy confirmed the diagnosis of syphilis. The blood count became normal in two of the children. The serious condition of the third child, who did not improve by diet and residence at the seashore, compelled the authors to resort to mercury rubs, sulpharsphenamine injections and transfusion with whole blood of the mother, which gave good results. Syphilitic anemia in infants does not manifest a pathognomonic symptomatology. The blood count depends on the age of the child, the degree of virulence of the infection and the child's hematopoietic system. But the principal etiologic factor is syphilis, to which other factors (prolonged milk diet, insufficient feeding, acute infections or faulty hygienic conditions) are added.

LYMPHOGRANULOMATOSIS IN CHILDREN. W. FEER, Jahrb. f. Kinderh. **123**:145 (March) 1929.

Feer reports nine cases of lymphogranulomatosis in children ranging in age from 3 to 16 years. All of the patients were given roentgen treatment; one of them was cured and has remained free from recurrence for five and one-half years. The author believes that the localization of the process depends on the portal of entry of the causal agent. If it enters through the mucosa of the pharyngonasal cavity the regional cervical lymph nodes are involved first. If it enters through the lungs the mediastinal lymph nodes enlarge. If it enters through the mucosa of the intestinal tract, the mesenteric and retroperitoneal lymph nodes are involved first and the process spreads through the thoracic duct, particularly to the supraclavicular lymph nodes on the left side; this fact should always be kept in mind in arriving at the prognosis and in outlining the treatment of patients with lymphogranulomatous involvement of the supraclavicular lymph nodes on the left side.

EXFOLIATIVE DERMATITIS IN CHILDREN. O. BAUMLER, Jahrb. f. Kinderh. **123**: 170 (March) 1929.

Owing to the fact that he observed typical cases of Ritter's disease in two boys, aged 3½ and 4½ years, Bäumler recommends that the term dermatitis exfoliativa neonatorum be replaced by the more inclusive term dermatitis exfoliativa infantum.

ACUTE EXACERBATION OF LATENT SYPHILIS IN CHILDREN. V. MIKULOWSKI, Monatschr. f. Kinderh. **43**:21 (March) 1929.

Mikulowski gives the case reports of two children, aged 3 and 4, in whom latent syphilis was rendered manifest by an attack of acute infectious icterus.

SKIN DISEASES DURING PREGNANCY AS INDICATION FOR THERAPEUTIC ABORTION. A. BUSCHKE and W. CURTH, München. med. Wchnschr. **76**:361 (March 1) 1929.

Buschke and Curth review a number of cases of skin diseases occurring during pregnancy. Their own observations, as well as the observations of others, have convinced them that in a case of impetigo herpetiformis the interruption of pregnancy is always advisable. Herpes gestationis gives a more favorable prognosis; only in exceptional cases is abortion indicated. More complicated are those cases in which pemphigus occurs during gestation. It should first be ascertained whether the pemphigus existed previously or whether it was caused by the pregnancy. In the first instance an interruption is often necessary, while in the second case the pregnancy should be terminated only if the condition of the patient becomes much worse as a consequence of this disease. The authors assert that in most instances the gravidity takes a normal course in spite of the pemphigus, and the skin disease generally disappears after labor.

EARLY DIAGNOSIS OF CONGENITAL SYPHILIS. P. E. HEINE, Zentralbl. f. Gynäk. **53**:683 (March 16) 1929.

To insure the early diagnosis of cases of congenital syphilis, Heine recommends the routine examination of the venous and the retroplacental blood of the mother. For this examination he prefers the Meinicke reaction; if the reaction is only weakly positive the venous blood of the mother is examined again eight days later.

Society Transactions

DETROIT DERMATOLOGICAL SOCIETY

H. J. Parkhurst, M.D., *Reporter*

Regular Meeting, Dec. 18, 1928

George Van Rhee, M.D., *Presiding*

Lichen Scrofulosorum. Presented by Dr. Schiller.

B. U., a girl, aged 8 years, presented erythematous, scaling patches of small follicular papules, following the lines of cleavage of the skin. The chest, back and thighs were involved.

Keloids (Following Syphilitic Lesions?). Presented by Dr. Wander.

E. R., a negro laborer, aged 26, presented keloids in circinate and grouped formations around the eyes, at the sides of the nose and mouth, and irregularly distributed over the neck, trunk and arms. He was said to have had a chancre two and one-half years previous to presentation, followed by an eruption at the sites of the present keloids. The Wassermann reaction, at first strongly positive, had become negative after treatment, the keloids remaining unchanged.

DISCUSSION

Dr. Schiller: There were two definite types of lesions. Those at the corner of the eye and on the neck seemed syphilitic.

Dr. Wile: I interpreted the condition as lupus vulgaris.

Dr. Wollenberg: I agree with Dr. Wile.

Dr. Valade: In the right ear were follicular plugs, suggestive of lupus erythematosus, but the condition was probably lupus vulgaris.

Pemphigus (Senear-Usher Type). Presented by Dr. Valade.

C. T., a negress, had been presented previously. Subsequently, there had been two exacerbations of the eruption. Large doses of sodium cacodylate were being administered.

DISCUSSION

Dr. Wile: Last year a similar case was shown in Chicago. The condition had previously been called dermatitis herpetiformis. In the discussion, Ormsby and Senear called it an unusual form of pemphigus, with symptoms resembling lupus erythematosus.

A Case for Diagnosis. Presented by Dr. Stevens.

A. F. T., aged 22, an American-born machinist, had a severe attack of acute bronchitis early in 1927; an examination of the sputum revealed nothing. At the same time a nodule appeared on the scalp, followed by six more within a few months. These were opened and "stringy" pus obtained. Similar nodules, over the right scapula, were opened also. Nothing was obtained on cultures. The wounds on the scalp healed slowly, after a second drainage; those on the shoulder did not heal. Iodides were administered, the dosage reaching 250 grains (16.2 Gm.) a day. A tumor appeared in the left buttock but subsided following incision. Roentgen studies showed an egg-shaped area of uniform density and with a smooth border in the base of the right lung. There was a new nodule in the left brow, and a tumor involved nearly the whole right buttock.

DISCUSSION

DR. WILE: Clinically, this condition looks like extensive colliquative tuberculosis, but one should not find this isolated focus in the lung. The various mycotic infections must be considered.

A CASE FOR DIAGNOSIS. Presented by DR. STEVENS.

Mrs. P. first noticed an eruption on the neck and arms in July, 1928. It persisted, and in August, following the removal of a cancerous right breast, a stiffness developed in the muscles of the arms and legs. These symptoms persisted, and in November her lips became swollen. There were pains in the legs and arms, and the patient was almost helpless. A dry, scaling, erythematous eruption was present on the chest, neck, face, scalp, extensor surfaces of the arms, forearms, thighs and legs, and also about the vulva. A burning sensation was present.

DISCUSSION

DR. BELOTE: I think I have seen this peculiar swelling of the face and soreness of the muscles in patients with trichinosis.

DERMATITIS MEDICAMENTOSA (DUE TO IODIDES). Presented by DR. BIDDLE.

W. J. M., aged 47, a salesman, presented several large, round, moist verrucous patches on the external surface of the right ankle, together with many small, healed, pigmented spots on the buttocks and elsewhere. The patient had taken potassium iodide for at least a month, and it had possibly been taken previously.

DISCUSSION

DR. BEHN: The lesions on the ankle somewhat resembled those of blastomycosis.

DR. WILE: It is true that eruptions caused by bromide and iodide can closely resemble those of blastomycosis. This case first impressed me as one of blastomycosis.

SCLERODERMA. Presented by DR. VALADE.

Mrs. R. M. S., aged 27, presented a diffuse cutaneous infiltration, with a violaceous border, on the left thigh. It was of two years' duration and was steadily enlarging. Toward the center of the patch, telangiectasia and brownish pigmentation were noted.

DISCUSSION

DR. PARKHURST: With the pale, infiltrated center and violaceous border, the clinical picture is that of scleroderma rather than of acrodermatitis chronica atrophicans.

DR. WILE: In such cases of scleroderma, there is a tendency to spontaneous involution.

DYSTROPHIA UNGUIUM (ASSOCIATED WITH RAYNAUD'S DISEASE?). Presented by DR. JAMIESON.

J. S. W., a man, aged 22, single, born in America, first noticed a deformity of the nail of the right index finger about one year before presentation. It had persisted, and the right thumb and middle finger showed a similar condition of two months' duration. The nail beds seemed unaffected, while the nails were irregularly depressed and elevated. For the previous two or three years, the patient had noticed an increasing cyanosis and coldness of both hands in moderately cold weather. The feet showed no signs of circulatory disturbances, and the toe-nails seemed normal. No fungi were found in scrapings from the affected nails. Glycosuria was present.

H. J. PARKHURST, M.D., *Reporter*

Regular Meeting, Feb. 13, 1929

GEORGE VAN RHEE, M.D., *Presiding*

SARCOID (BOECK); ERYTHEMA INDURATUM. Presented by DR. JAMIESON and DR. VAN RHEE.

Mrs. T. H., aged 29, presented many tender violaceous nodules of various sizes on the cheeks, chin, neck, chest, forearms, hands and inner surface of the right thigh, of eleven years' duration. There were larger tumors on the calves of both legs, which were becoming confluent. There was an area of telangiectasia on the nose which was probably due to previous roentgen treatment. Histologically, the lesions resembled those of xanthoma rather than those of sarcoid. Some improvement had occurred following five injections of gold sodium thiosulphate.

DISCUSSION

DR. JAMIESON: In the past, this patient has visited various hospitals, where the diagnosis of Boeck's sarcoid has been made. More recently, a deeper, ulcerating type of lesion had appeared on the legs, apparently either erythema induratum or the erythema induratum-like sarcoid. If clinical manifestations and results of treatment can be relied on, it would be called erythema induratum and not sarcoid.

DR. SHAFFER: Most sarcoids do not become typical histologically until a later stage. The lesions on the legs are certainly typical of erythema induratum; they are unusually painful. I wonder whether there are any tubercle bacilli in the lesions or in the blood stream.

DR. BELOTE: I saw the sections today, and also two or three years ago at Ann Arbor, and none of them look like Boeck's sarcoid. We considered the condition tuberculosis.

DR. PARKHURST: The lesions on the legs are apparently those of erythema induratum, and those elsewhere look like Boeck's sarcoids. As both of them are tuberculids, a tuberculous focus should be sought.

BROMODERMA. Presented by DR. SCHILLER and DR. SCHLEGELMILCH.

Mrs. R. P. first noticed pustules on her legs two weeks previous to presentation, after she had taken bromides for a week. There were many pustules the size of a pea and small crusted and verrucous lesions, the size of a coin. A few pustules were present on the face, neck and shoulders. No bromides had been taken for a week, and no bromine was found in the urine.

DERMATITIS FACTITIA. Presented by DR. SHAFFER.

Mrs. F. H., aged 35, had had numerous complaints and had been a constant visitor at the clinic for five years. Two years before the present illness she received a blood transfusion on account of a severe secondary anemia. There was an erythematous plaque on the external aspect of the right leg, just above the ankle. It had gradually developed from a small, superficial, moist, crusted lesion. The surface was glazed, violaceous and slightly infiltrated. There was no evidence of varicose veins or erythema induratum, and the blood picture was normal. The Wassermann reaction was negative.

DISCUSSION

DR. JAMIESON: The large erythematous lesion was somewhat suggestive of erythema induratum, but I agree that the condition is probably dermatitis factitia.

ECZEMA (ALLERGIC). Presented by DR. SCHILLER and DR. SCHLEGELMILCH.

J. S., a schoolboy, had had extensive eruptions since infancy. There was a small papular and lichenified eruption on the face and arms, especially in the cubital regions. The eruption was pruritic, and was worse in autumn and winter.

PITYRIASIS RUBRA PILARIS (?). Presented by DR. JAMIESON.

R. S., a contractor, aged 38, presented a dry hyperkeratotic condition of the palms and soles, of twelve years' duration. There were deep, painful fissures on the palms. The elbows were dry and scaling. Itching was present. The dorsa of the fingers had shown some faint follicular keratoses, suggesting pityriasis rubra pilaris. After a month of administration of a solution of potassium arsenite the lesions on the fingers disappeared.

DISCUSSION

DR. HYDE: Apparently this condition is pityriasis rubra pilaris.

DR. PARKHURST: The patient now presents keratosis palmaris et plantaris, with no evidence of pityriasis rubra pilaris.

ARSENICAL KERATOSES AND PIGMENTATION. Presented by DR. TROXELL.

A. K., a draftsman, aged 27, had had psoriasis for thirteen years, and had taken an "eczema remedy" more or less continuously since 1922. Keratoses of the palms and soles had first appeared in 1925, and had become numerous. Slate-colored mottling, of general distribution, had been present for a year.

LEUKEMIA CUTIS. Presented by DR. JAMIESON.

F. C., a man, aged 63, presented large patches of eczematoid dermatitis on the back of the trunk; some were sharply outlined and infiltrated, and all were pruritic. On the legs were a number of sharply outlined patches, roughly rounded, from 2 to 3 cm. in diameter, each lesion having a decidedly infiltrated, narrow border and a crusted center somewhat suggestive of granuloma fungoides. The inguinal and axillary lymph nodes and the spleen were palpable. The leukocyte count had increased in ten days from 20,000 to 40,000, and the last differential count had shown 12 per cent polymorphonuclear leukocytes, 82 per cent small lymphocytes, 4 per cent large mononuclears and 2 per cent eosinophils.

DISCUSSION

DR. HASLEY: The lesions on the legs are typical leukemids.

VON RECKLINGHAUSEN'S DISEASE. Presented by DR. VAN RHEE.

I. C., a nurse, had first noticed small tumors on the skin fourteen years prior to presentation. The increase had been gradual, and the tumors had become numerous and of general distribution. Only the palms and soles were free. The largest tumors were on the left side of the neck and the external surface of the left foot; they were as large as hen's eggs, and were tender. There were hyperpigmented patches on the neck, arms and thighs, and some of the tumors were pigmented.

DERMATITIS REPENS. Presented by DR. HASLEY.

R. M., a stenographer, aged 20, presented a vesicular, scaling eruption of the feet, of six months' duration, especially involving the fifth toe of the left foot. Intense itching accompanied the exfoliation. The examination of scrapings and cultures for fungi were repeatedly negative. Staphylococci were recovered. Therapeutic suggestions were sought, since roentgen therapy, quartz light, autogenous vaccine and moist dressings had failed to cause any improvement.

DISCUSSION

DR. PARKHURST: Immersion in potassium permanganate solution (1:1,500) may prove beneficial.

DR. SHAFFER: Tar may also be employed.

A CASE FOR DIAGNOSIS. Presented by DR. SCHILLER and DR. SCHLEGELMILCH.

H. H. had had a penile sore in 1914, which had been cauterized; mercury had then been taken by mouth for six months. A subsequent Wassermann reaction had been positive. One month before the time of presentation and three days after intercourse, three painful lesions had appeared on the shaft of the penis, together with a urethral discharge in which gonococci were found. The lesions were found to be negative by dark-field examinations.

PHILADELPHIA DERMATOLOGICAL SOCIETY

CARROL S. WRIGHT, M.D., *Secretary*

Regular Meeting, Feb. 1, 1929

SIGMUND S. GREENBAUM, M.D., *President*

LUPUS ERYTHEMATOSUS. Presented by DR. SIDLICK.

It is most unusual for two members of the same family to show lupus erythematosus, as in this case. The older sister had had this disease for the past seven years. The first lesion appeared on the nose and was diagnosed at the time as syphilis; treatment with neoarsphenamine was instituted, and gave rise to a dermatitis. The younger sister had her first lesion five months before on the inner canthus of the left eye, and at the time of presentation there was one on the nose. The lesions were then being treated with a gold compound and the older sister's lesions had shown marked improvement, while those of the younger sister had not shown any improvement at all so far. The older sister had chronic tuberculosis of the upper part of the right apex.

DISCUSSION

DR. WEIDMAN: I think that there is a definite difference in the color of these lesions. The element of yellow is definite in the younger sister, and if I should see these two patients apart, the first thing that would come into my mind in the case of the younger sister would be seborrheic dermatitis. The crusty material along the margins of the lids has been present a long time prior to the development of the cutaneous eruption; her scalp does not appear, however, to be particularly seborrheic. I do not know whether Dr. Sidlick examined her all over, but I take it that there are no seborrheic criteria, so that I dare say one has to accept the diagnosis of lupus erythematosus in this younger sister also. I cannot get away from the fact that the scales seem to be greasy and the lesions yellow. It has been the common experience that results from gold therapy in acute cases are not so likely to be beneficial as in the chronic cases. I do not know how the actual statistics will compare there. Of course every one recalls that in some of the acute cases there have been occasional serious flare-ups; in other words, there is a menace in acute cases that is not found in chronic ones, and I suppose that this consideration is at the bottom of the failure of the younger sister to show the improvement that the older one did. Dr. Wright can probably give us more data on the pros and cons.

DR. WRIGHT: I was struck by the same idea as Dr. Weidman, that the younger sister presented the appearance of seborrheic dermatitis. In fact, the only lesion

that shows atrophy is the one on the left cheek. I was wondering whether it ever had been treated with carbon dioxide snow.

DR. SIDLICK: I gave no treatment but that of a gold compound.

DR. WRIGHT: Let us differentiate these acute cases in a little different way. Let us speak of acute disseminated lupus erythematosus and acute discoid lupus erythematosus. By the latter I mean merely those lesions of the discoid type which appear on the face for the first time and appear only as slightly reddened superficial scaly patches, with as yet little or no atrophy. There is a difference in the response of patients with acute disseminated erythematosus and those with the acute discoid type of lupus erythematosus to treatment with gold compounds. Patients with the acute disseminated types of the disease respond poorly to gold therapy; some do not respond at all. I recall one patient in whom a generalized outbreak of the eruption was apparently stimulated by gold compounds. Patients with what one might call the acute discoid type will often do extremely well under treatment with gold preparations. We have had in the past year or two a number of patients in whom lesions were just appearing, and the condition cleared up within a short time after administration of the gold salts. All the patients with the discoid type have done well. However, of two patients with the acute disseminated type, whom I can recall immediately, one is now dead, although death was due to pneumonia, and the other is improved but far from well.

SYCOSIS VULGARIS RESISTANT TO THERAPY. Presented by DR. MILLER for DR. STOKES.

W. B., aged 22, a plumber, came to the hospital in November. At that time he gave a history of treatment by a private physician. After the second treatment his entire beard fell out in two weeks. The condition cleared up until the beard grew in, at which time the pustular eruption again appeared over the same area. He then had ten roentgen treatments at weekly intervals, with no change in his condition, after which he came to the hospital. There had been little result from treatment, and he was presented for suggestions.

DISCUSSION

DR. BROWN: The result obtained here is about the usual result. I usually pass these patients when they come to the dispensary. The x-rays are unsatisfactory whether a divided dose at weekly intervals is given or depilation is accomplished.

DR. ALLISON: I think that the reason one often does little good with the x-rays and has so much trouble in treating these patients with sycosis is one's failure to take into consideration the proper hygienic measures. I have a feeling that the condition in these cases is not so persistent as infections but that the people reinfect themselves all the time, especially in shaving. If this man were to shave at night or every other night, and wash his face thoroughly with tincture of green soap and apply ammoniated mercury, and if he would continue this routine over long periods, never shaving in the daytime or opening his hair follicles when he is going out to be exposed to the dirt and wind, etc., he would probably improve.

DR. WEIDMAN: I recall that my preceptor, Dr. Hartzel, used to emphasize the importance of regular shaving, and I think perhaps one is inclined now to forget some of the things the older men learned by bitter experience. Shaving does not remove hair, but it does scratch off the tops of some of these pustules and facilitate drainage of the abscesses. I can see that that would fit in with the theme Dr. Allison struck with regard to hygiene. All are familiar with those cases in which the condition is pronounced on the upper lip and nostrils — a chronic rhinitis — from which the infection is being reseeded onto the face. I think, perhaps, if one goes back to first principles in some of these cases, things our forefathers taught, one might get beneficial results, although of course every one realizes that they used to have unsatisfactory results in those days just as they

do at present. Something one should not forget is the modern propaganda about the rôle of yeasts in the production of dermatoses; those infecting the hair follicles are also to be numbered. It is being developed that persons who are occupied around farinaceous substances, bakers for instance and those working in flour mills, are more liable to yeast infections than others. I dare say that if some of these cases are followed up they will show yeast infection. I do not think that sycosis vulgaris should be looked on as invariably caused by *Streptococcus*. This has been accepted in the past as too much of a foregone conclusion. It should be looked at, among other things in the light of modern developments in mycology.

DR. WRIGHT: I think that this question of shaving is of considerable importance, and for other reasons than those enumerated. In these days most people are using safety razors and some form of strop, and almost every one uses a brush; yet these factors are seldom taken into consideration. Most men use a blade from ten to twenty times, and I think the infection may be kept up in good part by using blades over and over, by the stropping of these blades and using the brush every day, all of which harbor the infecting organism. It has been my advice to patients affected with sycosis vulgaris to discard their brush, and throw away blades after they have been used once. Dr. Greenbaum has been modest in regard to his filtrate. I think this is really proving of value as an addition to methods of vaccine therapy. He has previously spoken of it here a number of times. He makes a filtrate from the organisms recovered around the hairs and gives this in graduated doses. Recently in our private work we have been obtaining a vaccine and mixing it with the filtrate and giving it in graduated doses, and in certain chronic cases it has given encouraging results.

DR. GREENBAUM: For a long time I felt as Dr. Weidman and Dr. Allison do about the value of the antiseptic part in these sycosic affairs. As recently as last August Sabouraud put himself on record as not believing that the antiseptic measures help greatly in these cases. The greatest trouble is not with the germ but with the person; there is a lack of immunity or resistance, or perhaps an idiosyncrasy on the part of these persons in whom sycoses develop, and on that basis I feel that I am on the proper path with the staphyloccines. Clearcut conclusions have not been reached regarding the value of the staphyloccine. Experiments are being made with autogenous stock and mixed stock staphyloccines; but I feel from the work I have done so far and from the observations of those who have been good enough to try it out for me that this much is certain—that it has a definite influence on pyogenic conditions of the skin.

I should suggest either an autogenous or a mixed staphyloccine in this case. However, I should state that their action should be supplemented, for they are not enough by themselves. This treatment must be administered in conjunction with all the other therapeutic agents at one's command, including diet. Some months ago I treated a patient with severe furunculosis of ten months' duration. He stopped counting at the fiftieth boil. When I first saw him he had twenty or thirty furuncles. I started using autogenous staphyloccine on him, and the condition cleared up remarkably in about three weeks. Together with the clearing up of the furuncles, after the second or third injection, he acquired a feeling of well being such as he had not had for months. He went on a spree one Sunday, and within forty-eight hours six boils developed, which disappeared a week or so later. I had told him to let alcohol alone.

Curiously enough, Kolmer stated that alcohol in the experimental animal will inhibit the production of antibodies in the blood. There was evidently a lowering of antibodies in the blood in this case. Everything must be used in conjunction with the staphyloccine. There is apt to be a relapse following the use of this vaccine, but the relapse has been, in my experience, not so severe as the original attack, and the condition is so apt to yield to further injections.

ERYTHEMA INDURATUM AND ACRO-ASPHYXIA. Presented by DR. GREENBAUM.

B. G., a white woman, aged 19, had had a mottled bluish condition of the extremities ever since she could remember. About one year before presentation

a half dozen or more various sized nodules developed on both legs; they were slightly tender and disappeared on rest. At the time of presentation she was on a course of treatment consisting of rest and intramuscular injections of gold and sodium thiosulphate and neoarsphenamine, plus glandular therapy. Her sister and mother likewise had acro-asphyxia.

DISCUSSION

DR. STRAUSS: I examined this patient about a month ago for an insurance company. The girl claimed that the lesions arose from an injury. At the time there was only the erythema induratum; the mottling of the leg was not nearly as prominent. There was a marked nodular condition in both legs, which has considerably cleared up. I cannot say whether the improvement was the result of the administration of gold compounds or of the rest, but this girl made wonderful progress.

DR. WEIDMAN: She gave a history of having been employed in a meat store, where she was continually on her feet, which, of course, fits in well with the usual history for erythema induratum. The perhaps questionable family history of the same trouble on the legs recalls the livedo reticularis which Williams described some time ago, but I should say this was not the racemose type of circulatory disease.

LUPUS VULGARIS. Presented by DR. GREENBAUM.

A man, aged 32, presented a well defined scaly patch about the size of a large orange, slightly inflammatory, on the left outer upper side of leg, of about ten years' duration.

DISCUSSION

DR. ALLISON: Lupus vulgaris, or tuberculosis of the skin, is something I rarely see. There is too much sunshine down South. I should have thought that this was a solitary patch of psoriasis when I first saw it. Of course, after looking at it carefully and considering the long period of time that the patient had had it, and seeing the nodules, I think that it must be lupus vulgaris.

DR. SIDLICK: One should not judge from the clinical features alone. The case of lupus which I presented superficially looked like dermatitis seborrhea, yet, from analysis of the individual lesions, undoubtedly the disease is lupus erythematosus.

DR. WEIDMAN: I have heard the statement made by a foreign visitor that lupus vulgaris is probably much commoner in the United States than it is customarily thought to be, but that it is not correctly diagnosed. It appears that this is an instance in which the diagnosis was made although the lesion was atypically located and psoriasiform. I do not agree that the rarity of lupus vulgaris in the United States is the fault of observation, I believe it is a rarity.

PAPULONECROTIC TUBERCULIDS. Presented by DR. GREENBAUM.

This patient presented on the hands a number of nodules some of which had ulcerated and left scars of many years' duration; they appeared particularly in the winter. In the last few months similar lesions had developed on the face. They had largely disappeared under intravenous injections of a gold preparation and neoarsphenamine. This patient was presented because of the tuberculosis on the face, which is a rare localization.

DISCUSSION

DR. WEIDMAN: There is just one phase of the subject I should like to touch on — not to go around it too exhaustively — and that is the matter of the histology. In these cases in which a gold preparation has been administered, I should like to inquire whether here in the cradle of gold therapy in tuberculids and tuberculosis any inquiries have been made concerning the action of gold preparations in the skin and whether it can be demonstrated in that position.

DR. STRAUSS: As to the therapeutics in these cases, I was wondering what experience other men have had with gold preparations in tuberculids of this type. It is my experience that these conditions clear up under treatment with gold preparations, but that they tend to recur. I might say in this case that the diagnosis of the condition on the face would be rather difficult at this time. I do not feel that there are any typical lesions except the scars. It is a rather unusual location for the disease.

DR. WRIGHT: I should be inclined to minimize the effect of gold compounds in true tuberculosis of the skin. Of course, the most striking results are obtained in lupus erythematosus, and it remains to be seen whether lupus erythematosus is a true tuberculous condition of the skin.

DR. STOKES: I have nothing striking to add to the discussion. Of course, I should like to ask whether it is the neoarsphenamine or the gold preparations which accomplishes the result in these patients who are being treated by both methods. Each will do some good. Apropos of what Dr. Strauss asked about relapse, lately I have had disappointments with gold preparations, although I have tried to apply everything that Dr. Schamberg has said publicly concerning them. I was wondering whether it was the gold preparation itself, for it has been around my office for some time. These patients always have a relapse, and in a considerable group that I saw at the Mayo Clinic, we insisted that they sleep outdoors, follow the diet of a person under treatment for tuberculosis and take rest and treat themselves in every way as persons with tuberculosis.

DR. GREENBAUM: Regarding the physical condition of this patient, his well being is apparent. I presented before the society several years ago a girl, well nourished, with papulonecrotic tuberculids, which cleared up under administration of neoarsphenamine and then recurred the following winter. The condition then cleared up under treatment with gold preparation, and the patient has been free from lesions now three years since the institution of gold therapy. The same thing happened in a case of erythema induratum. My experience, although rather limited, has been that the gold preparation is the better of the two methods; but, since they are both of value, I use them both.

DR. ALLISON: Have you ever used sodium aurothiosulphate?

DR. WRIGHT: Sodium aurothiosulphate corresponds to gold and sodium thiosulphate. While I do believe that gold preparations are specific for lupus erythematosus, I feel that better preparations of gold may be discovered in the future. For many years it was known that sodium arsanilate had certain curative effects in the treatment of syphilis, but it remained for Ehrlich to discover the form of arsenic best suited for the treatment of this disease. It is now known that the administration of gold preparations is beneficial in the treatment of lupus erythematosus, but we must await the coming of a second Ehrlich to find that chemical formula containing gold which will give the best results with the least toxicity. There are many little points in the administration of this drug in lupus erythematosus which may make the difference between failure and cure. Failure to increase the dosage sufficiently may result in failure of the eruption to disappear.

DR. STOKES: There is another point, inspired by Dr. Greenbaum's first remark, which I should like to make. The patients are always too obviously in good health, and their healthy appearance should not interfere with insistence on the tuberculosis regimen. The fat tuberculous subject is as familiar as the blond, red cheeked hectic person. Focal infections sometimes affect the patient as much as the alleged tuberculosis, and if they are not carefully attended to, a good result will not ensue.

A CASE FOR DIAGNOSIS. Presented by DR. GARNER for DR. STOKES.

H. T., colored, aged 9 years, presented a dermatosis of seven months' duration following an attack of measles. On the outer aspect of the left thigh there was a deep pigmented lichenified patch 4 inches (10.1 cm.) long and 2 inches (5.08 cm.) in diameter, with an atrophic center and hyperpigmented border. At

the periphery of this lesion small, white, miliary macules, seated rather deeply in the skin, were noted. Down on the leg there were also a number of small, white, miliary macular lesions which appeared to be rather deeply seated.

She was a rather precocious child physically and mentally and was head of her class in school. There was some hypertrichosis of the lip and of the legs, and scant development of pubic hair. The Wassermann reaction of the blood was negative. Histologic examination of the section showed no characteristic observations except that Dr. Weidman's reports indicated a marked condensation of the glandulous tissues in certain portions of the section, with tendency to degeneration bordering on necrosis.

DISCUSSION

DR. SIDLICK: The clinical aspect of the lesions suggests morphea.

DR. SCHILDKRAUT: I am inclined to think that the condition is scleroderma.

DR. CORSON: It is probably morphea.

DR. WRIGHT: I think that there is one thing one must take into consideration in a mulatto, namely, the tendency of the skin of these patients to become depigmented following any inflammatory process in the skin. I do not know just how carefully the presenter went into the patient's history. I should want to rule out the possibility of some inflammatory process, perhaps even an acute burn, or something of that type that might have left this depigmentation.

DR. WEIDMAN: I think that this is morphea. I saw the patient at her first visit, when the condition appeared as patches of miliary depigmentation, uniformly spaced from each other as if at hair follicles, and suggested as the diagnosis "scleroderma allied to white spot disease." At this early stage histologic examination showed no atrophy of the epiderm, but of course that may be a matter of the atrophic stage not quite having been reached. I felt that there was some atrophy of the sweat tubercles. The low hair line in front is a feature which brings to mind pituitary disease.

DR. STOKES: This is the first time I have seen this patient. She appeared on our service while I was ill, and I think it is probable that this condition is an involuting morphea. The mother gives a distinct history of purple and indurated or palpable lesions; the redness has disappeared; the process is in the atrophic stage. Was there colloid degeneration in the skin in any of the sections Dr. Weidman saw?

DR. WEIDMAN: I do not believe so.

DR. GREENBAUM: The pigmentation is not characteristic and the thinning at the periphery of the lesion without any induration at all, with the central part definitely indurated far more than the periphery, suggests to my mind, at least, that the suggestion made by Dr. Wright ought to be given due consideration. There are a number of small, depigmented areas farther down on that leg which have no other change apparently than the depigmentation.

TUBERCULOSIS OF THE SKIN. Presented by DR. WOLFE.

A colored waitress, aged 19, seen on the service of Dr. Klauder, in the outpatient department of the Philadelphia General Hospital, first noticed some lesions on her face in June previous to her presentation. These spread peripherally—I should say there were about a half dozen present—made their appearance rather slowly and remained stationary for some time. Later they broke down, ulcerated and gave rise to some crustation, which was not marked; there was a considerable amount of scaling. About a month later she noticed similar lesions appearing on her forearms and on her legs. The lesions on the forearms ulcerated, the amount of discharge being scant, and resulted in atrophic scaling and hyperpigmentation between the scales. There were also several lesions on her hands. This patient was presented as having tuberculosis of the skin, with probably three distinct types: the lupus maculosis of the face, the papulotuberculid on the forearms and what resembled lupus pernio on the hand.

DISCUSSION

DR. SIDLICK: I cannot see what can be gained by subdividing this condition into three different groups. I believe that they all represent one type of tuberculids.

DR. WRIGHT: I agree with the diagnosis offered by the presenter.

DR. STOKES: I agree with the presenter. I do not think the diagnosis should be regarded as established until the biopsy report is received. I should like to hear a subsequent report on the biopsy.

SYMMETRICAL KERATODERMA OF THE EXTREMITIES (PROBABLY ACQUIRED). Presented by DR. CROSS for DR. SCHAMBERG.

This condition began when the child was 3 years of age as small keratotic lesions that gradually spread so that by the age of 5 the eruption had covered both palms and soles; it had been that way even since. The father said that the condition was always better in summer time. She showed markedly thickened, horny plaques, with definite borders, surrounded by a reddish areola; some of this thickening spread dorsally over the middle phalangeal joints of both hands. She also presented a bluish-red mottling of her skin generally and a curve of the nails and some broadening of the distal ends of her fingers. We tried to go into the family history but were unable to obtain a history of this condition being present in any other member of the family, parents or grandparents. We also tried to be sure that this condition had appeared before she was 3 years of age. As far as her father was able to tell us, the condition began when she was 3 years of age, was well pronounced when she was 5 and has persisted ever since.

DISCUSSION

DR. STOKES: I should like to say that I do not think the diagnosis is by any means a foregone conclusion. I recall a patient shown at the Chicago Dermatological Society who clanked as he walked along the floor barefooted as if his soles were metal plated. I think it may be the keratodermic type of dermatophytosis. It may turn out to be the other, but I would not accept the more hopeless outlook. Have you examined the urine for arsenic?

DR. CROSS: Regarding drugs, I went into a history about that and up till the time that this condition began, appearing as it is today, there was no history of the patient's ever having taken medicine by mouth. Since then she has taken medicine, but not before.

DR. HIRSCHLER: I have been trying to find out if there was any gonococcal infection.

DR. WEIDMAN: I recall that when I saw my few cases of gonorrheal keratosis very much the same question as Dr. Stokes mentioned came into my mind. I had always imagined that they were genuine keratoses and not those associated with any surrounding hyperemia, and I might say that I do not believe I have ever seen a case of symmetrical palmar keratosis that did not show the surrounding erythematous margin. The name keratosis palmaris is a misnomer; it really is a dermatitis with excessive keratosis. Syphilitic keratodermas, likewise, generally are more than simple keratoses. I am inclined to agree with the diagnosis as presented.

DR. STOKES: I saw at the Chicago Dermatological Association one time a young man who had keratosis of the palms, I should say about 75 per cent as marked as this condition, but not morphologically identical with it, who was taking a remedy for epilepsy containing bromide and arsenic.

We have also had under observation a man in whom pemphigus had been modified in type by the Davis treatment with coagulen and iron cacodylate. He developed arsenical keratosis of the palms, so extensive that he could almost have clashed them like cymbals. No neuritis or any of the other symptoms of the arsenical intoxication picture appeared. One should not exclude too quickly

the possibility that the condition might be arsenical in origin or that it might be syphilitic.

DR. HIRSCHLER: A few years ago I presented a case of acute pellagra with keratotic dermatoses of both palms, and plaques on various parts of the trunk. When the child had been carefully fed and taken out of poor hygienic surroundings, all the lesions disappeared and the skin became smooth.

DR. STRAUSS: I have in mind two patients in whom the condition cleared up remarkably under the administration of neoarsphenamine, in spite of the fact that both had negative reactions to the Wassemann test. Both were adults.

DR. STOKES: I called attention in my text to the fact that it is difficult to distinguish palmar eczemas from palmar syphilis because both tend to respond to the arsenic in arsphenamine.

DR. WEIDMAN: By the method of Osborn I have been able to demonstrate arsenic in the tissues. His technic is workable, but I am satisfied that when I have it to do again I will run along a piece of normal skin with the unknown, because the granules are excessively small and have to be distinguished from precipitants in connection with the technic.

DR. HIRSCHLER: I should like to see this child placed on a diet and carefully watched before she is treated with active measures.

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RAY HASKINS ROULISON, M.D., *Reporter*

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ISIDOR ROSEN, M.D., *Chairman*

XANTHOMA TUBEROSUM MULTIPLEX. Presented by DR. TRAUB.

The patient was presented before this section six months ago. The treatment that seemed to do the most good at the onset was small doses of roentgen rays. Complete disappearance of the lesions on the face followed four exposures. Since then he had failed to respond to roentgen treatment, and all kinds of treatment at the Skin and Cancer Hospital had not brought about any improvement in the condition.

DISCUSSION

DR. POLLITZER: Has this patient been on a fat-free diet?

DR. HOWARD FOX: Has a starvation diet, as recommended by Dr. Wile, been used?

DR. TRAUB: Yes, this patient has been on a fat-free diet and also on a starvation diet.

ROENTGEN RAY PIGMENTATION. Presented by DR. BECHET.

For the relief of acne vulgaris, V. C., a colored woman, aged 24, had received a single dose of roentgen rays on January 10, of the following formula: 3 milliamperes, 6 inch gap, 8 inch distance, fifteen seconds to the front of the face and thirty seconds to either side. One week later, a marked pigmentation occurred. A second treatment was not given, but the right arm was exposed in three areas to ⅛, ¼ and ½ unit, with resulting pigmentation in the area receiving ⅛ unit as great as that in the area receiving ½ unit.

DISCUSSION

DR. ANDREWS: I do not think that there is anything unusual in this case. Frequently ⅛ of a skin unit dose causes pigmentation in brunettes; all of the test areas on the arm are so small in diameter that one cannot estimate what dose was given to them, because on such small areas the measurement of dosage is inaccurate and one cannot estimate minute differences properly. I saw a patient who had been given ⅛ of a filtered erythema dose by a roentgenologist so that he could take a roentgenogram of the teeth. The patient showed pigmentation in the area in which the dose had been given a week previously. This is not unusual. I have seen it frequently after the application of ⅛ skin unit. The condition generally recedes. Pigmentation has nothing to do with the biologic effect of the roentgen rays on the production of erythema, and is just a peculiarity of the skin that no one knows anything about.

DR. WILLIAMS: I should like to bring out one point, i. e., pigmentation developed within a day or two; it is therefore of a different nature from ordinary roentgen erythema. It is a separate reaction and is not to be confused with the other. It does not mean that the patient has been over-exposed or that he will develop sclerosis. This patient responded with pigmentation immediately, and the condition should be distinguished from a true roentgen reaction which occurs a few weeks later.

LICHEN PLANUS OBTUSUS. Presented by DR. BECHET.

A. F., a man, aged 56, said that the eruption on his legs had been present for twelve years, and had never occurred elsewhere. On the lower third of both legs, he presented lenticular, dark red to brownish papules, ranging in size from that of a small pea to that of a large pea, and aggregated to form large patches. The histologic section showed a papule with a hyperkeratotic scale. The epidermis was somewhat thickened with irregular distortion of the basal cell layer. The rete pegs were irregular; some were long and thin. There were vesicles in the epidermis. The granular layer was thickened. There were dilated blood vessels and edema and a moderate cellular infiltration in the upper cutis which ended abruptly in the midcutis. There was some perivascular infiltration.

DISCUSSION

DR. TRAUB: My impression is that lichen planus obtusus is synonymous with prurigo nodularis.

DR. BECHET: I think that Dr. Traub will find that lichen planus obtusus is lichen planus hypertrophicus, and that the word obtusus is used when distinct nodules, either discrete or confluent, are present. The word obtusus means nodular.

PARAPSORIASIS AND GRENZ-RAY SEQUELAE. Presented by DR. GROSS.

H. W., a man, aged 56, born in Russia, was previously shown before the Academy of Medicine on Dec. 7, 1926.

At the time of the second presentation, the patient's condition had not changed considerably, but the itching had increased. Treatments with ultraviolet light during 1927 had improved the eruption temporarily. Since the end of 1927, the face had become affected. During the summer of 1926, the patient received treatments with the grenz rays by Dr. Bucky and his assistants. The treatment of the lower extremities was followed by a severe dermatitis which was most marked in the popliteal regions, and which healed in the course of a few weeks.

The patient was not seen from May, 1927, to January, 1929. He said that he had not been treated by any physician during that interval.

Examination revealed little change in the eruption on the body. Besides the large erythematous and exfoliating patches, he showed a few smaller, brighter red and slightly infiltrated plaques, as seen at the first presentation. The face was covered with several fairly sharply circumscribed, erythematous and scaly

patches. In both popliteal regions were rather numerous, markedly dilated capillary loops (telangiectasias) but no signs of atrophy.

The question arose as to whether the present picture was more suggestive of the prefungoid stage of mycosis fungoides and what treatment should be instituted.

DISCUSSION

DR. SATENSTEIN: A patient seen at the Post-Graduate Clinic presented distinct clinical atrophy and telangiectasia of the region between the shoulder blades following repeated exposures to grenz radiation. The microscopic examination of tissue from this area showed sclerosis of the collagen, absence of the elastic tissue fibers and dilatation of the upper vessels. The epidermis was thinned in the form of a band; in other words, sequelae resulting from roentgen radiation were present.

DR. HIGHMAN: I have had occasion to study fairly intensively the histology of the skin both in human beings and in experimental animals, after exposure to the grenz ray for different lengths of time at varying intervals after exposure. Although from time to time a transitory picture (such as Dr. Satenstein described) exists in experimental animals, on observation at a later date these manifestations seem to disappear and the skin becomes apparently normal. If that observation proves to be correct after study of a greater number of subjects and over longer periods, it will indicate a difference between the effect of the roentgen rays and the grenz rays on tissue.

DR. WOLF: I should like to refer to an article which appeared in the *Strahlentherapie* last year, concerning the grenz rays. A series of patients were exposed to the grenz rays, and further observation of these cases showed typical roentgen sequelae. The authors concluded that the grenz ray is a form of the roentgen ray and produces the same sequelae as the roentgen rays when carelessly handled.

DR. HOPKINS: It seems to me that one important feature of this case is the apparent chronic radiodermatitis. The possibility of producing such lesions with the short wave roentgen rays has been in dispute. As I understand it Bucky has been insistent that it is impossible to produce atrophic changes with these rays, and Martenstein has been equally insistent that following a marked reaction one must expect a late atrophy in some instances. If this is a case of telangiectasia resulting from treatment with the short wave roentgen rays of Bucky, I believe that it is the first case on record.

DR. ANDREWS: Dr. Highman's work should not be taken too seriously until after it has been completed. There has been too much tendency in the literature to distinguish the effect of the grenz rays from the roentgen rays. They are the same, and I believe physically should have the same effect. The reason less atrophy and telangiectasia occur is due to the fact that the grenz rays do not last in concentration at a depth sufficient to cause destruction of the blood vessels, being absorbed principally, in the voltage Bucky recommends, in the upper 2 or 3 mm. of the skin. The thickness of the skin at the place of exposure is the point in question; if there is thickening in the epidermis the ray cannot penetrate deep enough to make any change in the cutis; if the skin is thin, as it is in certain parts of the body, there is no reason why atrophy and telangiectasia should not result. Bucky cites a case in which he has gotten telangiectasia with from 12 to 14 kilovolts; whereas, he says that with 10 kilovolts no injury results. This depends on the amount and the depth of the tissues he reaches. Theoretically, in a thin-skinned person, with 10 kilovolts, telangiectasia can be produced. It is only a matter of absorption and concentration of the absorption, and there are no biologic and physical differences between the two rays, except in wave lengths.

DR. HIGHMAN: I think that Dr. Andrews is correct. I do not believe that Bucky distinguished between the grenz rays and certain types of roentgen rays. There is no belief current anywhere, so far as I know, that the two are generally different. It is a question of wave length, depth of absorption and type of biologic changes that the grenz rays consistently produce in contradistinction to the more penetrating roentgen rays. That being so, it follows that Dr. Andrews' hypothetic

conclusions will probably prove correct enough, but, in the meantime (since the grenz rays have been given a name), the effects produced do not seem to be as permanent as those produced by the roentgen rays. According to the tentative experiments I have witnessed, they do not cause permanent changes. If the grenz rays should be used with a higher voltage, greater penetration would be produced and undoubtedly the conditions Dr. Andrews mentioned are likely to be produced, but would these be the grenz rays in Bucky's sense?

I think that if Dr. Wolf has understood that the grenz rays are not a type of roentgen rays he has misunderstood the literature.

DR. ABRAMOWITZ: I should like to amplify the discussion of Dr. Satenstein and Dr. Andrews. The case Dr. Satenstein referred to is that of a patient of Dr. Eller, who received a triple erythema dose with 8 kilovolts. It is Bucky's contention that a voltage below 10 is not capable of producing roentgen sequelae. It is only fair to say, however, that these sequelae are extremely rare, and only show atrophy and telangiectasia.

DR. POLLITZER: Now that the question of whether or not the grenz rays are capable of producing radiodermatitis has been disposed of, I should like to ask something about the patient. I question the diagnosis. It is a common error to confuse parapsoriasis of the Brocq type with mycosis fungoides in the early stages. My opinion is that this man probably has mycosis fungoides rather than parapsoriasis. Has a biopsy been made?

Of course a biopsy in the early stage of this condition, even if it is mycosis fungoides, might show rather negative results, not revealing anything definite, and it might, after a lapse of two years, give a different picture. I simply wanted to call attention to the fact that there is a possibility that the condition is mycosis fungoides. The skin is far too red for the parapsoriasis of Brocq; the areas involved are unusually extensive, and the involvement of the face is also, to some extent, against that diagnosis. Furthermore, there is considerable itching. I would ask that this patient be followed up and shown again in a few years. The condition may go on this way for a number of years without showing anything more definite, and in the end might prove to be mycosis fungoides.

DR. HOWARD FOX: In cases of this kind, three diseases are almost invariably to be considered: mycosis fungoides, parapsoriasis and seborrheic eczema. I should advise treatment with the roentgen rays as a therapeutic test. If after a reasonable trial, improvement resulted, parapsoriasis could be excluded.

DR. FEIT: I cannot subscribe to the statement that the grenz rays never can produce atrophy, because I have seen three patients with sycosis who were treated by the grenz rays and who showed atrophy. There seems to be another type of damage caused by the grenz rays. At the present time I am treating a patient who received about twenty exposures of the grenz rays. He shows no atrophy, but tumefaction of the skin, similar to that sometimes resulting from the roentgen rays, an example of which I showed two years ago in a girl treated for lupus erythematosus.

DR. HIGHMAN: I have seen patients with sycosis vulgaris who were treated with neither the roentgen rays nor the grenz rays and who showed atrophy. It cannot be inferred that therapy has any connection with atrophy in this disease.

DR. GROSS: It was just the point that Dr. Pollitzer brought out which induced me to present this patient again. As a matter of fact, I considered and treated this condition in the beginning as mycosis fungoides. Only the negative histologic observations and certain clinical features made me change my tentative diagnosis to parapsoriasis. I will make another biopsy and report the observations at the next meeting. As to treatment with the grenz rays, I wish to say that the immediate reaction after treatment, in the parts showing telangiectasia, was severe. Anyway, two and a half years after exposure is rather a short period for the development of a chronic radiodermatitis. Therefore, one might expect similar sequelae from smaller doses after longer incubation periods. As to the voltage, I believe that it was below 10 kilovolts.

LICHEN PLANUS IN MOTHER AND CHILD. Presented by DR. FEIT.

M. B., a boy, aged 12 years, born in the United States of Italian extraction, gave the history of an eruption on the eyelids, the penis, the left leg and the inner side of the thighs of five months' duration. The mother also had had lichen planus of the left leg. There were circinate lesions on the affected areas consisting of polygonal papules with central depression.

DISCUSSION

DR. SCHEER: I know of three brothers in one family who had lichen planus, but not at the same time. All of them were well beyond middle life.

DR. POLLITZER: I recall a case of a young man with extensive lichen planus for whom inunctions of a mercury-phenol salve were made by his sister. She developed lichen planus while treating her brother. I did not regard it as anything more than a coincidence.

BULLOUS ERUPTION IN A PSORIATIC PATIENT. Presented by DR. BLOOM.

V. J., a man, aged 67, a Greek, consulted the Skin Clinic of the New York University Medical College for the first time in 1924 for a generalized eruption of ten years' duration which was then diagnosed as psoriasis.

On Jan. 4, 1929, the patient returned to the clinic, complaining of intense generalized itching. On examination the old eruption of fifteen years' duration was found located on the trunk, extremities and penis and consisted of erythematous papules, somewhat infiltrated and elevated above the skin, and varying in size from that of a dime to that of a quarter; some of them were covered with a thin silvery scale. On the flexor surfaces of the forearms coalesced papules formed patches which were somewhat violaceous and shiny. No lesions were found in the mouth.

Besides the old lesions which had been diagnosed long ago as psoriasis, a few bullae were present on the trunk and extremities, which had started to appear three weeks previous to the patient's visit. There were tense or flaccid bullae filled with clear serum, and varying in size from that of a pea to that of a hazel nut. There was no red halo around them. Some were broken, bearing an erythematous base. Most of the bullae seemed to arise on the old psoriatic lesions, but some of them appeared on healthy skin. The bullous eruption appeared in crops. On the successive visits, the patient did not present any fresh lesions. Since the occurrence of the bullous eruption the general itching appeared, and was so intense that the patient suffered from insomnia.

The patient looked well nourished and in good health; the Wassermann reaction of the blood was negative. The blood count showed: erythrocytes, 5,500,000; leukocytes, 10,800; hemoglobin, 95 per cent; the differential count was normal, and showed eosinophils, 1 per cent.

DISCUSSION

DR. HIGHMAN: I can report on the biopsy of this patient. A week ago the first specimen, evidently from an old psoriatic lesion, showed the usual changes seen in this condition. The specimens studied today were a psoriatic lesion, again showing the structure of psoriasis, and a bullous lesion. It was the bullous lesion that was illuminating. In an epidermis which had many features of psoriasis there were bullae, and these bullae were situated relatively high up in the epidermis in the vicinity of the stratum granulosum. They were flaccid, like bullae seen in pemphigus foliaceous. In one of the fields the remnants of bullae were seen in which the epidermis had proceeded, in its rise to its own surface, as flat spaces, as though they were interpolated in what appeared otherwise to be psoriatic scales. Thus, in this particular field, the picture of pemphigus foliaceous in a psoriasis-like scale was seen. An infiltration was present in a markedly edematous papillary body consisting of the ordinary cells seen in an ordinary inflammatory process in the skin, with marked deposits of eosinophils and a few plasma and mast cells.

DR. ANDREWS: It would be interesting to make a culture of the bullae to see whether they are sterile. One sometimes sees the streptococcus causing bullous lesions.

DR. WILLIAMS: I think that the discussion Dr. Highman raises is important. Psoriasis is extremely common. A psoriatic patient may develop pemphigus, and there is no reason why a man should not present two diseases at the same time; it is a possibility always to be considered.

DR. BLOOM: It is pertinent to cite in connection with this interesting case the report by Volk (*Wien. klin. Wchnschr.*, 1910) of cases of pemphigus in which psoriatic lesions appeared in the place of the bullae, and also of a report by Kissmeyer (*Hospitalstid* **60**:717, 1917) of a girl, aged 13 years, in whom a remittent bullous eruption was followed by typical psoriatic lesions. Has the bullous eruption in the patient presented, which is in all probability pemphigus, anything to do etiologically with the psoriasis or is it only a mere coincidence?

LUPUS MILIARIS. Presented by DR. ABRAMOWITZ.

E. S., a negro woman, aged 21, married, seen at the Post-Graduate Skin Clinic, said that both her parents had died when young of unknown cause. The patient was in fairly good health. She had been married three years and had had a miscarriage one year after her marriage. She had received some antisyphilitic treatment after having had a blood test. When she was pregnant the second time (about two years before first being seen), an eruption had begun to break out on the eyelids, lips and nostrils, and had remained ever since. The infant was about 1 year old and was well.

On examination the eruption was found to consist of small isolated papules, ranging in size from that of a pinhead to that of a small pea, which involved both the upper and the lower eyelids. A few lesions were still present on the nostrils, and many were found on the vermilion border of the lips. Marked adenopathy of the submental, epitrochlear and inguinal glands was present. The Wassermann and Kahn tests were 2 plus.

The biopsy showed the epidermis to be markedly thinned and covered with a crust. Throughout the upper cutis were collections of numerous tubercles with epithelioid cells and moderate lymphocytic reaction. Granular degeneration was taking place in the center of many of the tubercles.

CIRCUMSCRIBED CALCINOSIS. Presented by DR. OULMANN.

T. G., a woman, aged 24, gave a history of having had chilblains of all the fingers at the time she started going to school. The lesion on the end of the phalanx of the ring finger had started seven years prior to presentation as a small white patch, slightly raised and itchy. The lesion had grown slowly larger and was finally about 1 inch (2.54 cm.) long and ½ inch (12.7 mm.) wide, and consisted of a white, hard plaque raised above the surface. When the patient first came to the clinic, there was a bluish edge around it. A biopsy specimen was taken which showed wide lymph spaces and homogeneous masses that failed to stain. There was an abundance of these filling the cutis. Little connective tissue was left. The masses were probably calcareous, but were not stained for lime.

DISCUSSION

DR. ABRAMOWITZ: Because of the yellowish color of the lesions, I think that the condition possibly is a xanthoma. I should like to hear from Dr. Oulmann, if in addition to the lime, any xanthoma cells were found in the section.

DR. HOPKINS: Dr. Oulmann was kind enough to let me see the sections from this case. The calcium was unmistakable and lay in abundant and rather coarse masses between the collagen fibers throughout the corium. As this was unexpected, the tissue was not decalcified, and the sections were consequently somewhat ragged. It was impossible to make out any other lesion or to make a reasonable guess as

to what was the original lesion which had apparently undergone secondary calcification.

Does Dr. Abramowitz know of other instances of calcification occurring in xanthoma?

DR. OULMANN: When I saw the patient at first, there was a violaceous margin all around the lesion. Calcium deposits are found in scleroderma, so I thought of the possibility of calcinosis in morphea. The slightest indication of xanthoma was not found anywhere in the section.

DR. ABRAMOWITZ: Fibrosis in xanthoma occurs often enough. Is it not also possible for calcification to take place?

TREATMENT OF LUPUS ERYTHEMATOSUS WITH A GOLD PREPARATION. Presented by DR. BECHET.

D. V., a man, aged 49, was exhibited at the 1925 meeting of the Atlantic Dermatological Conference, held in New York, in order to demonstrate the sad results of overtreatment in a case of long standing, extensive discoid lupus erythematosus, consisting of radiodermatitis, epithelioma and mutilation. In two and a half years, the patient had received more than 100 injections of 100 mg. each of gold sodium thiosulphate. Shortly after his admission to the clinic, the epithelioma had been surgically excised. The lupus erythematosus had disappeared entirely from the left cheek and nose, leaving a smooth pliable scar, and the right cheek was almost well, much of the redness being due to the radiodermatitis. The epithelioma had not recurred. He had greatly improved in health, and had never had any reaction from the gold sodium thiosulphate, although he did react badly to a gold protein preparation which was used at first.

LEPRA ANESTHETICA (CURED?). Presented by DR. SPIEGEL.

A. N. was presented before this section on Dec. 6, 1921, as having lepra anesthetica. He had been under treatment during the early part of 1922 and had received about twenty intramuscular injections of ethyl chaulmoograte, U. S. P., and also had taken the same remedy by mouth over a period of months, having taken in all about 20 ounces (591.5 cc.). He disappeared and was not seen again until about two months prior to the second presentation. All the lesions had disappeared, and the boy presented no evidence of lepra. The neurologic examination gave negative results. Pharyngeal and nasal secretions were also negative. The Wassermann test of the blood was reported as negative. The boy's mother was in the leprosarium at Carville, La.

DISCUSSION

DR. POLLITZER: I happened to see this boy the first time he came to Dr. Spiegel's clinic, and made a diagnosis of leprosy. He had decidedly thickened ulnar nerves together with erythematous, pigmented and anesthetic patches. I think I could feel that the ulnar nerves were rather larger and harder than normal, with replacement of leprous tissue by connective tissue. The fact that he is free from lesions now and presents nothing on which the diagnosis of leprosy could be based is presumptive but not conclusive evidence of his being cured. He has received, on the whole, a small amount of treatment. He was given injections of ethyl chaulmoograte over a short period, and for a long time took the same preparation by mouth. It is not at all impossible that the leprosy is cured, but I want to say that it is not certain. He must be under observation for from five to ten years more before he can be considered definitely cured.

DR. SPIEGEL: Of course there is a question as to the cure, and I have indicated this by the question mark in the title. As a matter of interest it may be mentioned that the government regulations in these cases cover a period of observation of at least six years before patients are discharged as cured.

TREATMENT OF LUPUS ERYTHEMATOSUS WITH A GOLD PREPARATION. Presented by DR. BECHET.

E. S., a woman, aged 28, said that the eruption had begun on the nose thirteen years previously, and had soon spread to the cheeks. About two years before presentation and shortly after injections of a gold preparation were begun, she developed an acute generalized eruption over the trunk, which, on subsiding, had left lesions as shown. On the nose and cheeks were thickened, brownish-red to brown, scaly patches of lupus erythematosus. A large patch was found on the chest and on the back. They were sharply outlined, somewhat serpiginous, bright red patches, covered with small adherent scales and strongly suggestive of psoriasis. A section showed a hypertrophic epidermis with a well developed corneum and irregular rete pegs. Horny plugs were present. In places the rete pegs were obliterated, and in this area there was round cell infiltration. An edematous mesh contained dilated blood vessels. Marked basophilic degeneration was present. Prior to admission to the clinic, the patient had received, according to her statements, sixty-five injections of a gold preparation, with no apparent change in the eruption. She had been given twenty-four additional treatments of 100 mg. each by the presenter with no reaction, and with little, if any improvement.

DISCUSSION

DR. GOODMAN: The outline of the lesions on the chest and back might be due to exposure to brilliant light on the stage.

DR. FEIT: Was the patient examined for focal infection? I have had several patients with lupus erythematosus who, after removal of focal infection, improved. One patient had a mucous cyst in the upper jaw; after removal of this cyst, the patient improved without further treatment.

DR. BECHET: She shows no evidence of focal infection. I, myself, believe that the rôle of focal infection in lupus erythematosus is somewhat exaggerated. Regarding the question of light as a causative factor, as suggested by Dr. Goodman, I will state that this woman has a plaque immediately adjacent to the buttocks. She is not a movie actress, but is a dancer on a vaudeville circuit. She is therefore exposed only to a spot-light on the ceiling of the theater. Under these circumstances, an actinic etiology can be dismissed. The interesting point in this case is the complete negative results obtained with gold compounds. It is the first case in a rather extended experience that has shown such absolutely negative results, and it is presented for this reason.

PSORIASIS OF THE NAILS. Presented by DR. FEIT.

E. S., a man, aged 28, born in Germany, and having lived sixteen years in the United States, with a negative family and personal history for psoriasis and other skin diseases, presented an eruption of eight months' duration. The lesions were located on all the finger nails and the nails of both big toes. The patient had first noticed stippling of the nails, which he thought was caused by working in the garden. Later on, the nails were extremely brittle. They showed stippling, longitudinal striae and heaping, and some of them had wavelike bending. They also had a moth-eaten appearance. There were no signs of psoriasis on the rest of the body. Results of mycologic and microscopic examinations, as well as the culture, were negative.

DISCUSSION

DR. SCHEER: The patient presented lesions only on the nails, and from the changes in the nails alone one cannot make a diagnosis of psoriasis in this case. The discoloration, pitting, and other symptoms can occur in other diseases. According to Heller, there is only one pathognomonic lesion of the nails; that is a red papule under the nail, at times scaly and very rare. I have never seen it. From the lesions in this case, the diagnosis of psoriasis should not be made.

DR. HOWARD FOX: I do not think that a probable diagnosis of psoriasis should be made from the appearance of the nails in this case. The changes that are said to be most suggestive of psoriasis were not present. Such changes include pitting, subungual hyperkeratosis with elevation of the nail plate and transverse furrows. I presented a case of this kind with no other lesions as a probable case of psoriasis, the diagnosis being accepted by all who were present.

DR. WILLIAMS: I would like to agree with Dr. Fox. One can make a presumptive diagnosis of psoriasis from an examination of the nails, but not a definite one. These heaped up toe-nails are found in hundreds of patients seen in the clinic who have no evidence of psoriasis.

DR. MCCAFFERTY: I was interested in what Dr. Scheer said regarding Heller's observations. I have had a patient under observation who developed small reddish lesions of the nails, the size of a split pea. As the nail grew out, these lesions disappeared. However, there was some thickness and brittleness present. In addition to these lesions in the nails, the patient had a few lesions of psoriasis on the body. This is the only patient I have seen who presents a condition that corresponds to the remarks of Dr. Scheer. I believe that anyone seeing these nails would have immediately thought of psoriasis. As Dr. Howard Fox brought out, there are patients who have fairly definite clinical psoriasis of the nails. However, if psoriasis is not present on the body, the so-called psoriatic nail is frequently confused with ringworm of the nails, and there is always much difference of opinion.

URTICARIA PIGMENTOSA IN AN ADULT. Presented by DR. FEIT.

J. de M., a woman, aged 45, born in Italy, a resident of the United States for eighteen years, had had a generalized eruption for thirteen years. Except for erysipelas the patient had always been healthy, and the personal and family histories were irrelevant. The lesions had appeared first on the flexor surfaces of the arms as discrete macules and papules, which were set rather close. These efflorescences sometimes became red and swollen, like hives. Except for the slight itching in the summer, the patient had had no sensation from the lesions. When they disappeared, pigmented spots remained. The present eruption consisted partly of red, partly of pigmented, irregular outlined patches, varying in size from that of a pinhead to that of a bean. After rubbing, these lesions became urticarial. There was no general adenopathy. The liver and spleen were not enlarged.

The blood count showed: 5,000,000 red blood cells; 15,000 white blood cells; 61 per cent polymorphonuclears; 37 per cent small lymphocytes; 2 per cent monocytes, and eosinophils, 0. The blood sugar was 108, chlorides 503 and uric acid 4.54 per cent; the basal metabolic rate was not recorded. The Wassermann reaction of the blood was negative. Biopsy section showed an epidermis with some pigment in the basal cell layer. There was a slight cellular infiltration about the dilated blood vessels of the upper corium. The cellular infiltration consisted of lymphocytes. There was a slight granular degeneration of the connective tissue fibers of the upper corium and papillary bodies. Methylene blue stain showed mast cells.

URTICARIA PIGMENTOSA (ADULT TYPE). Presented by DR. ABRAMOWITZ.

B. S., a married woman, aged 29, born in Germany, had had no children and no miscarriages. She had first come to the Skin Clinic of the New York Post-Graduate Hospital on Jan. 30, 1929. Her previous health had always been excellent. She had never been operated on. The present skin disease had begun two years previous to presentation, appearing first on the forearms, and gradually spreading over the entire trunk and neck. Subjective symptoms consisted of an occasional spell of slight itching, which lasted only a minute at a time. Spicy food, tomatoes and exposure to heat aggravated the condition.

The eruption as shown at presentation was distributed over the entire trunk, neck and all four extremities, including the dorsal surfaces of the hands (the

palms and soles were free, as were the mucous membranes). The lesions consisted of yellow or reddish-brown, round or oval, well defined macules; no scaling or infiltration could be felt.

There was marked dermatographism, and the lesions had become slightly elevated, swollen and firm after rubbing.

The Wassermann test was reported as negative; urinalysis was also negative. The blood count showed: 5,000,000 red blood cells; 9,000 white blood cells; 70 per cent polymorphonuclears; 30 per cent lymphocytes; 1 per cent eosinophils, and 0.5 per cent basophils.

Biopsy was done, but the report was not in at the time the patient was presented.

DISCUSSION

DR. MCCAFFERTY: I should like to know whether any roentgenograms of the thymus of these patients have been made. Some time ago, Dr. Guy of Pittsburgh pointed out a thymus staticus in a young child; after roentgen treatment was directed to the thymus, the lesions cleared up.

DR. WERTHEIMER: Regarding the treatment of these patients by Dr. Guy, while the eruption did clear up at first, if I recall correctly, it promptly recurred.

DR. FELDMAN: This patient presents a good example of the acquired type of macular variety. Three forms were distinguished, i. e., the plain or macular form, the nodular and the mixed form. The condition seems to me to be more common in adults, and adults usually show the macular form. This patient is 20 years of age, and the eruption started three years ago on the forearms, spreading over the body and extremities. The oldest case on record is that of a man, aged 56. The pathognomonic symptom is swelling and standing out of the lesions after the skin is rubbed.

The histologic report in this case is not in, but I except to find mast cells. If that does not hold true, the diagnosis will not be changed, because both juvenile and adult patients have been found without mast cells. Fraser says that repeated examinations should be made before mast cells are ruled out. Dr. Fred Wise reports one case in which a section was taken and no mast cells found but, in the following year, mast cells were found. Therapeutically, I would subject this patient to the roentgen rays. Dr. Howard Fox reports a cure after roentgen therapy. Mr. MacKee likewise reports a similar case. There has been no roentgen treatment of the thymus. The case Dr. McCafferty mentions was that of a child, but I do not know whether similar observations were reported in adults.

DR. FEIT: In the French literature, some authors express the opinion that some of these cases show pseudoleukemic changes (Jeanselme).

DR. HOWARD FOX: As Dr. Feldman has referred to my case, I would say that six months later I again presented the patient, at which time the eruption appeared as profuse as before treatment. The result, which proved to be temporary, was obtained by about ten fractional doses of roentgen rays at weekly intervals. A similar experience was later recorded by Michael.

ANGIOFIBROMA SUGGESTING KAPOSI'S SARCOMA. Presented by DR. HOPKINS.

J. M. D., aged 32, married, white, born in the United States, said that about eleven months prior to presentation the right leg below the knee for about 6 inches (15.24 cm.) had become swollen and slightly tender on pressure, and that a severe pricking and burning in the skin of this area had been present. Prior to this time the patient had felt decidedly below part, extremely nervous and weak for about three months. About one month later, in the swollen area several irregular, dark red, elevated patches had occurred, which were quite tender on palpation. Several weeks later, general soreness and swelling disappeared from the leg, and since then more lesions of a similar nature appeared while some of them disappeared spontaneously. Five months after the appearance of the original spots on the legs, a similar one appeared on the left hand and wrist without any preliminary swelling

or soreness. This was slightly tender to touch but not as painful as the one on the leg. One month prior to presentation an area of skin on the dorsum of the left wrist had commenced itching, and several new spots the size of pinheads were seen in this area. The patient applied a black salve which caused a severe dermatitis the following day; this had taken about three weeks to heal, and at the site of this irritation a dark red, elevated scar remained.

On the front and sides of the right leg, extending from the knee to the ankle, were a number of irregularly outlined patches, varying in size from 1 to 10 cm. Some of the lesions were dark red, slightly elevated and firm on palpation. The skin over the lesion was thin, atrophic and showed fine wrinkling. Some of the involved areas that had undergone involution spontaneously were flat and light brown, but showed the same tissue-paper atrophy of the overlying skin. On the dorsum of the left wrist and hand were similar lesions showing both the flat lesions and the more recent firm, elevated ones. The center of the larger lesion on the wrist was covered with a yellow elevated crust about 2 cm. across.

Biopsy showed a moderate keratosis with an atrophied epithelium beneath; the papillae were completely absent. Just beneath this epithelium was a tumor-like mass which was distinguished from the deeper and more normal appearing corium and consisted of whorls of rather closely packed fibroblasts, with definite vascular clefts scattered throughout.

BROMODERMA. Presented by Dr. BECHET.

E. R., a man, aged 37, had been taking Dr. Hill's cascara quinine pills for about a week prior to the appearance of the eruption. These pills, which he took three times a day, were a patented product containing 1½ grains (0.09 Gm.) of acetanilid, and an unstipulated amount of bromide, quinine and cascara sagrada. After a week, during which twenty-four pills were taken, the eruption became manifest, first on the arms, then rapidly spreading all over the body. The eruption consisted of a large number of various sized papules appearing all over the body, even the palms being affected. A number of these lesions were hemorrhagic, particularly about the buttocks and legs. The color, the distribution and the morphology bore a marked resemblance to those of a papular syphilid. A careful and painstaking inspection, however, revealed no primary lesion. Adenopathy was absent; the Wassermann test of the blood was negative twice.

SUPERFICIAL CICATRIZING EPITHELIOMA. Presented by DR. FEIT.

T. S., a housewife, aged 29, born in the United States, said that the eruption, which had been present six years, had started as a white lump the size of the head of a pin and had gradually spread. There was an area of about 2 by 2 inches (5 by 5 cm.) on the forehead which showed an atrophic center and raised border. The border consisted of reddish papules which were raised about 1/20 of an inch above the normal skin and were covered with crusts in some places. After the removal of the crusts, there was a shallow erosion left. The raised border formed nearly a circle which was accompanied by a semicircle running parallel to the upper part of the outer circle. These papules were of a rather hard consistency. There had been no treatment.

ARSPHENAMINE DERMATITIS. Presented by DR. FEIT.

The patient had received seven old arsphenamine injections. This was followed by an exfoliative dermatitis which lasted five months. During the attack, the nails and the hair on the scalp fell out. Arsphenamine was again given, and a second attack of exfoliative dermatitis developed. The Wassermann reaction at first was negative, but changed later to 2 plus. The hairs which had been curly before grew back straight, and the nails were shed twice. (These notes were made on Nov. 27, 1928.)

On Feb. 1, 1929, the patient complained of an itching eruption on the back on both sides of the chest and on both feet. The latter showed punctate hemorrhages. The rest of the rash was a follicular dermatitis. The patient also complained of severe sharp pain in both calves which was hardly bearable, lasted about five minutes, and appeared once in two weeks. The hair grew darker in color.

ARSENICAL ERUPTION OF THE PALMS. Presented by DR. FEIT.

Mrs. F., a housewife, aged 38, born in Italy, had never been seriously ill. The eruption, located mainly on the palms, was of eleven years' duration. There was no history of psoriasis or of diabetes in her family. The patient had seven healthy children.

Physical examination revealed nothing pathologic except an enlarged thyroid gland. Both palms were fissured; in some places the uppermost layer of the skin was missing, and denuded areas were surrounded by a ring of hyperkeratotic epidermis. There were other areas in which the epidermis was unbroken, being slightly infiltrated and hyperkeratotic. On the dorsal surfaces of both hands were reddish papules, varying in size from that of a pinhead to that of a dollar, which were covered with micaceous scales with little infiltration. The nails were normal. The patient entered the New York Skin and Cancer Hospital on Nov. 5, 1928. Before that time she had been taking drops and pills for nine years but could not state whether they contained arsenic.

Chemical examination of the blood showed that the blood sugar varied from 106 to 137 with a low chloride content, as low as 396 and ranging up to 487. This proportion was always the same, a high sugar and a low chloride content, which gave the so-called metallic curve that was pathognomonic for arsenic poisoning, according to Dr. Throne and Dr. Myers. Arsenic was found in the patient's urine in ten times the normal amount, 0.3 (the normal being 0.03).

EXFOLIATIVE DERMATITIS SECONDARY TO PSORIASIS. Presented by DR. FEIT.

The patient, a woman, from the New York Skin and Cancer Hospital, had always enjoyed good health, and had two healthy children. One cousin had died of diabetes. The generalized eruption had been present for eighteen years. She had had psoriasis for ten years which, according to her statement, had started on the palm of the right hand, later involving the genitocrural region. The patient had been admitted to the hospital in 1911 by Dr. Trimble who had diagnosed the condition as psoriasis and effected a temporary cure by the use of chrysarobin. After ten years' duration the psoriatic lesions had been replaced by a generalized erythroderma covered with fine scales; this condition had been going on for eight years prior to presentation.

At the time of presentation, the eruption consisted of an erythroderma involving the whole skin from the scalp to the soles. Scaling was checked by the application of salves. The vermilion border of the lips also showed psoriatic scales. The nails showed pitting, typical for psoriasis. The palms and soles showed hyperkeratosis and fissuring. There was no glandular enlargement at the time of presentation. The patient's Wassermann reaction was negative; the blood count was normal; the blood chemical determination showed sugar 120, and chlorides 450.

HYDROCYSTOMA AND XANTHELASMA. Presented by DR. ANDREWS.

F. S., a white woman, aged 56, born in the United States, was first seen in the Vanderbilt Clinic on Jan. 9, 1929, at which time she gave a history of a small lesion appearing under the right eye two years previous to presentation and of other areas which had gradually become involved. The Wassermann reaction was reported as negative.

Examination showed three subcutaneous tumors below the right lower lid. Two of them were about 1 mm. in diameter and the other about 4 mm. The tumors were soft and fluctuating, yellowish over the upper half and rather bluish in the

lower half. Along the outer margin of the left lower lid were two similar lesions, one about 4 mm. and the other about 6 by 2 mm. in size. Just below the inner canthus of the right eye were two of these lesions, one 1 mm. almost confluent with one about 0.5 mm. in diameter; the former was definitely elevated and was more grayish, except at the upper inner border which was distinctly yellow. Two lesions about 2 mm. in diameter were just distal to the lesion mentioned.

Section showed a thin epithelial layer apparently flattened out in one place where there was a large cystic mass which contained a pink amorphous material. The wall of the cyst consisted of two or three layers of cuboidal and squamous cells with large, darkly stained nuclei and indefinite cytoplasm. The cystic mass was in the corium and appeared to be a dilated sweat gland duct. Several dilated coil ducts were seen near it.

LUPUS CARCINOMA. Presented by DR. WILLIAMS.

L. L., a man, aged 62, born in Denmark, seen at the New York Skin and Cancer Hospital, said that the lesion on the cheek had first been noted when he was a child and was still living in Denmark. Treatment had been begun when he was 5 years of age. Treatment had continued in one form or another with slight remissions ever since. Although he visited the Finsen Institute, he never received treatment with the Finsen light. From time to time treatment had consisted of silver nitrate, galvanic electricity, scrapings, cauterization and caustics. While he was between the ages of 19 and 29, no definite treatment had been given. For many years the lesion was treated locally with lotions of one form or another.

Twenty-six years prior to presentation, the patient had what he described as an abscess on the left cheek. He was treated at one of the clinics of the Post-Graduate Hospital by scraping and the application of plasters. The supposed abscess healed within two months. Ten years before presentation the site of the former supposed abscess again became inflamed (according to the description of the patient), but he had sought and obtained no medical treatment for the abscess until seven years later. For about two years, he was treated by a physician who used silver nitrate and salves. Other internal medication was also administered. The lesion of the cheek had healed until six months before presentation, when the patient had noticed further trouble at the site. He treated himself by the use of salves, plasters and lotions. The patient reported to the clinic of the New York Skin and Cancer Hospital on Jan. 12, 1929.

On clinical examination, the face showed a lesion extending on the left cheek from about the level of the eye, down the cheek to the level of the jaw; it passed to the left on the neck, encroaching on the left side of the neck at and near the midline below the chin. That area of the skin disclosed three phases: (1) In the uppermost part, there was scarring with a number of keratic papules distributed over it. 2. Above the mandible, about the level of the mouth, was a protuberant mass, red, smooth and moist with a hypertrophic overhanging edge. There was no evidence of the so-called pearly margin. 3. The lower part of the skin lesion, that on the neck, was made up of a conglomeration of papules with a brownish, so-called apple-jelly color. It was evident that these three phases of eruption were one and the same process, differing only in time and reaction. The clinical diagnosis of lupus carcinoma was made. A section of skin was removed from the upper border of the ulcerated lesion, and another section was removed from the most recent advance of the lupus vulgaris under the chin.

The pathologic diagnosis was lupus vulgaris associated with prickle cell epithelioma.

Section showed an epidermis that had ulcerated at the top and in one place was thin. There were long projections of the prickle cells into the corium. These prickle cells in places showed numerous mitotic figures and hyperchromatism. Scattered throughout the corium were tubercles consisting of lymphocytes, endothelial cells and giant cells of the Langhan's type. At the margins, where there were no prickle cells, there was an infiltration of inflammatory cells extending into the epidermis.

ST. LOUIS DERMATOLOGICAL SOCIETY

NORMAN TOBIAS, M.D., *Secretary*

Regular Meeting, Feb. 13, 1929

R. H. DAVIS, M.D., *Presiding*

LUPUS ERYTHEMATOSUS. Presented by DR. GRINDON.

A white man, aged 22, a theological student, had always been highly sensitive to the sun's rays, burning and peeling if exposed for a few hours, although he never tanned. A brother and sister were similarly sensitive, the sister being also subject to eczema. Two brothers and one sister were without especial susceptibility. One maternal aunt had much skin trouble, including primula dermatitis. In the summer of 1924, the redness of the nose and ears grew more marked, continuing uninterruptedly from June to October. In May, 1927, the condition grew worse, the face, neck and ears being red, swollen and pruritic. In July, a bright erythema spread over the whole body, followed after about ten days by scaling, although a faint redness of the skin persisted until the following April, with a deep red, slightly scaly patch on the end of the nose 15 by 12 mm. in diameter and another near the right outer canthus of the eye, 12 by 7 mm. in diameter. The diagnosis was lupus erythematosus.

Beginning on Nov. 7, 1928, five weekly intravenous injections of 1 Gm. of gold-sodium thiosulphate were given. By December 5, the lesions had nearly disappeared, and by February, 1929, the patient had apparently recovered.

DISCUSSION

DR. GRINDON: The use of a gold compound in the treatment of patients with lupus erythematosus is commonplace today. The case was introduced on account of its interesting history. Anything that throws light on the etiology of this disease is worth noting. In this case, sensitivity to light seemed to be a factor.

DERMATITIS OF THE MALE NIPPLES. Presented by DR. GRINDON.

A white man, aged 25, a medical student, had a condition of one year's duration. Both nipples and areolase presented a scaling itchy dermatitis, recurring in cycles, beginning with a pinhead vesicle which dried after a day. The surface then cracked and scaled. There was burning and itching; this was followed by a free interval lasting two or three days; then the cycle was repeated. On the chest, 2 inches (5.08 cm.) below the right nipple, was a reddened, scaly, itchy patch which did not go through a cycle or show vesiculation; it began three months before presentation and has been continuously present ever since. In the last three weeks satellite lesions have developed about the lesion. A few acne lesions were present on the back. No dandruff was visible. A salicylic sulphur salve brought no improvement after two weeks. A resorcinol-boric lotion was being used at the time of presentation.

DISCUSSION

DR. COLEMAN: I think that the condition is a fungous infection of the right breast. On the back, the eruption appears to be acne.

DR. WEISS: For a specific reason, I asked the patient whether he had any eruption on the toes. I have seen cases in which one or two such patches developed, associated with a dermatophyton infection of the toes, and I always classified the lesions as trichophytide. Patches may develop and disappear in two or three days; they occasionally look something like those of a seborrheic dermatitis. I have one case in a boy, aged 17, who has a dermatophyton infection of the feet and toes. Associated with it are about twelve yellowish patches on the body. The lesions on the trunk are slowly improving pari pasu with improve-

ment of the feet. It occurred to me that this case is something of that type, and that the anal or genitocrural regions, or the nails might reveal the source of the infection.

DR. GRINDON: The case was shown on account of the condition of the nipples, recurring in cycles for a year. A cycle lasts about nine days. One day there is itching and burning about the nipple, then vesicles appear, which later form scales and crusts and finally desquamate. The active stage lasts about six days, with two or three days of freedom; then it begins again.

DR. LANE: Are the lesions on the areola typical vesicles?

DR. GRINDON: They do not occur beyond the border of the areola.

DR. LANE: The history and appearance suggest the presence of factitious lesions.

DR. GRINDON: There is nothing to suggest that. The patient is an intelligent young man.

DR. TOOMEY: I remember having had a patient with similar lesions that occurred only on one nipple. At the time I thought perhaps it was relapsing herpes.

DR. DAVIS: The condition looks like trichophytosis to me, but I do not know what would be the reason for the vesicular eruption on both nipples.

PAPULONECROTIC TUBERCULIDS. Presented by DR. LANE.

A white woman, single, aged 42, a hemstitcher, had had enlarged lymph glands on both sides of the neck for the past fifteen years. Four months before presentation a biopsy was done on a cervical gland, and a diagnosis of lymphoid tuberculosis was made.

On December 1, the patient noticed an eruption on the hands which gradually became more extensive. The lesions began as a small red papule, which slowly increased in size and then disappeared. The patient said that the surface did not rupture and that pus did not form. Subjective symptoms were not noted.

The eruption when first seen on December 13, was limited to the dorsal and lateral surfaces of the fingers of both hands, but later appeared on the toes. The primary lesion was a firm, raised, bright red papule, varying in size from that of a pinhead to that of a split pea. In two days, the papule developed a paler central zone which was evidence of a beginning pustule formation. In three or four days pus developed, and on discharge of the contents of the pustule a depressed ulcer was formed. These healed in a week with formation of depressed scars. During the pustule stage until the contents were evacuated, the patient complained of pain and tenderness. Smears from the pus revealed the presence of *Staphylococcus aureus*, and cultures showed the same organisms.

DISCUSSION

DR. STRYKER: My diagnosis is tuberculid.

DR. GRINDON: The symptoms seem to fall in with the diagnosis of acrodermite suppurative continuée of Hallopeau.

DR. WEISS: The lesion may be a tuberculid, but possibly not in the sense of being caused by tubercle bacilli. Guy, of Pittsburgh, described tuberculids as being caused by other organisms, and the case should be investigated from that standpoint. The fact that it comes on the fingers where the circulation is diminished ought to be emphasized. Tuberculids of various kinds are more prone to occur on the extremities, or on other parts of the body where the circulation is slower, as the tip of the nose, the ears and the forehead. This would make me think that the present condition could be so classified, yet the lesions do not look like the tuberculids of Rist and Rolland, where the reaction is like a Koch reaction.

DR. GRINDON: Was this condition periodic or continuous?

DR. LANE: New lesions appear all the time. One interesting feature of the case is the fact that the patient had enlarged glands of the neck for fifteen years and had never noticed any skin manifestations. A cervical gland was removed for biopsy, and while the wound was still healing these lesions began to appear for the first time on the fingers. The patient believes that the taking of the biopsy had produced the lesions on the fingers. The lesions on the hand are doubtless a type of tuberculid. The tubercle bacillus is often difficult to obtain in such lesions and may never be found. The staphylococcus is a secondary invader. Whether this will prove to be a true tuberculid or one of the type described by Guy remains to be worked out by further observation and laboratory and clinical tests.

DR. GRINDON: When we say tuberculid, we should define what we mean, real or á la Guy.

DR. WEISS: If this means a genuine tuberculid you are not likely to find a tubercle bacillus. The Koch reaction produces a highly cellular condition of the skin. The nontuberculid tubercle is similar. In the original Koch experiment it took from three to four weeks after the injection of tubercle bacilli to produce a tuberculous abscess. The same guinea-pig reinfected with tubercle bacilli after twenty-four hours, due to the allergic reaction, shows a tuberculous abscess. In forty-eight hours it breaks down rapidly and heals rapidly.

DR. GRINDON: I think that what Dr. Weiss has said is true about the phenomenon of tuberculids. It seems to me that scrofuloderma is a true tubercular process.

DR. STRYKER: Are not tubercle bacilli common in erythema induratum, which is a typical tuberculid?

DR. WEISS: If you are going to enlarge the class of tuberculids to include all tuberculous processes, we are going to be more confused than ever.

DR. GRINDON: Erythema induratum is usually included in the tuberculids.

DR. STRYKER: Erythema induratum is the result of an allergic reaction.

DR. GRINDON: In lupus erythematosus, bacilli are so few and far between that they are hard to find. Levir said that he would often look over fifty fields before finding a bacillus.

DR. STRYKER: It is rather difficult to accept in toto the idea that these tuberculids are not due to tuberculosis. The fact that staphylococci or streptococci or other cocci appear in the cultures of these lesions does not prove anything. The patients improve with rest in bed and general care. I think the tubercle bacillus is the cause of the tuberculid and that the tuberculid would be likely to be improved by general treatment for tuberculosis. This would quiet the focus of infection which is pouring out the bacilli in the blood stream.

DR. DAVIS: I think that the condition might be tuberculid á la Guy plus tuberculosis, which has already been proved, so I do not think we can say it was a Guy tuberculid alone. It would be classed as a tuberculid, as Dr. Stryker said before.

MYCOSIS FUNGOIDES. Presented by DR. M. C. SNIDER.

A white woman, aged 51, a widow, a housekeeper, complained of an eruption on the legs which began three years before presentation, first appearing on her ankles and progressing up on the thighs. There was little pruritus. There was some burning sensation, especially after bathing. Slight improvement has resulted with local applications. The patient had had a normal menopause nineteen years before. She had one son, aged 27, who was living and well. The family history was negative. She had had an abdominal operation eighteen years before, otherwise her health had been excellent.

The eruption involved the extensor surfaces of the legs and thighs extending also on the lateral aspect of the thighs. There was a slight involvement of the flexor surfaces of the legs. There were several small lesions on the lateral aspect of the right arm. The body was free from any eruption. The lesions were roughly symmetrical and consisted of large brownish-yellow, sharply defined scale plaques, which were thickened and infiltrated, and thinned out at the border. There were multiple configurations, which were crescentic, round and segmental. Results of a physical examination were essentially negative. The blood pressure was 140 systolic and 90 diastolic. The Wassermann reaction was negative. Blood culture was negative. The urine was normal. The red blood cells numbered 4,700,000; the white blood cells, 9,200. The hemoglobin content was 80 per cent. The differential count showed: polymorphonuclears, 64 per cent; lymphocytes, 27 per cent; transitionals, 8 per cent; eosinophils, 1 per cent. A biopsy report was not available at the time.

DISCUSSION

DR. SNIDER: I think that this is a case of mycosis fungoides.

DR. KRING: It is mycosis fungoides.

DR. COLEMAN: I agree with Dr. Snider and Dr. Kring.

DR. STRYKER: Clinically, the condition appears to be a premycotic stage of mycosis fungoides.

DR. GRINDON: When the woman presented herself at my office two years ago, the eruption was most marked below the left knee, with little involvement of the right leg. As there was doubt concerning the diagnosis, the patient was presented here. My provisional diagnosis was parapsoriasis. Today, the condition is more like a mycotic mycosis. The outlines are unusually typical. One can almost see the building-up about the lesions across the room.

DR. LANE: I believe that the condition is mycosis fungoides.

LEUKEMIA CUTIS: Presented by DR. M. C. SNIDER.

A white man, aged 63, a tin mill worker, was presented because of a generalized pruritus of three years' duration. It was intensified when the clothing was removed or any portion of the body was exposed. About one year before presentation, an eczema appeared on the hands and feet and extended over the entire body.

The skin over the entire body was erythematous, thickened and covered with white laminated scales. There was extreme hyperkeratosis of the palms and soles, covered with thick greasy scales and crusts. The finger and toe-nails were markedly dystrophic. The lymph glands were enlarged, firm and not tender. The patient was well developed and nourished. There was a slight bronchitis. The heart was somewhat hypertrophied. The liver was enlarged. The spleen was not palpable. The blood pressure was 158 systolic and 92 diastolic. The Wassermann reaction was negative. The chemical examination of the blood was within normal limits. The red blood cells numbered 9,150,000; the white blood cells, 23,000; the hemoglobin content was 80 per cent. The differential count showed: abnormal lymphocytes and lymphoblasts, 51 per cent; polymorphonuclears, 24 per cent; transitionals, 8 per cent; eosinophils, 2 per cent; small lymphocytes, 15 per cent. Report of a biopsy on the inguinal glands and the skin has not been made.

EXFOLIATIVE DERMATITIS. Presented by DR. M. C. SNIDER.

A white man, aged 46, born in Germany, an upholsterer, had an eczema of the forehead which persisted and spread to other portions of the body. There was severe pruritus and considerable scaling.

The entire body surface was involved. The skin was erythematous, thickened and covered with white scales. The condition was worse on the ankles and feet. The toe-nails were dystrophic, and the lymph glands were enlarged. The heart and lungs were negative. The liver was enlarged. The spleen was not palpable.

The blood pressure was 102 systolic and 70 diastolic. The Wassermann reaction was negative. The urine showed a trace of albumin. The blood culture was negative. Results of chemical examination of the blood were essentially negative. The red blood cells numbered, 2,560,000; the white blood cells, 15,300; the hemoglobin content was 60 per cent. The differential count showed: polymorphonuclears, 60 per cent; lymphocytes, 17 per cent; large lymphocytes, 7 per cent; eosinophils, 15 per cent; basophils, 1 per cent. Biopsy of the axillary gland and skin has been performed, but report was not available at the time of the meeting.

DISCUSSION

DR. STRYKER: The first case belongs to the group of lympho-blastomycoses which cannot be classified as eczematoid dermatitis. This might have been done at one time. I have seen a case very much like this one with the exception that in my case the eosinophils were 39 per cent; otherwise, the picture was about the same. A biopsy was done on an inguinal gland. Dr. Collier was able to show that we were dealing with Hodgkins' disease. The man now has a normal blood count and has improved on arsenic medication.

DR. SNIDER: Clinically both cases are alike, but a differential diagnosis should be based on the blood picture.

DR. GRINDON: I took them both to be lymphoblastomas. While there is a difference in the blood pictures, the clinical picture is otherwise the same. Apparently one is of lymphatic origin; I do not know about the other, for I could not make out any enlargement of lymph nodes in this patient.

DR. LANE: These two cases have been under observation for some time. The first one belongs definitely in the lymphoblastoma group, corresponding to the picture of leukemia cutis. Clinically, the second case closely resembles the first, but the blood picture is different. It might be classified as an aleukemic leukemia. The microscopic sections of the skin and glandular tissue will soon be available to help in the formation of a more definite classification.

DR. GRINDON: These conditions begin with a surface irritation. I think that the skin condition is often the cause of the leukemia.

DR. TOOMEY: It might be a leukemia cutis.

DR. DAVIS: The first case is, I believe, one of leukemia cutis. A question of interest is what might have been the original excitant. The man had been a worker in tin, which might perhaps have caused an irritation. I think they are both cases of leukemia. The leukemia sometimes exists before the skin condition. We have all seen asymptomatic cases in which a skin picture developed later.

DR. GRINDON: The condition looks like leukemia, but the blood picture is not presented. That leads me to think that the origin of the blood condition in true leukemic cases is often in the skin; aleukemic cases later become leukemic. In holding to the idea that the blood condition is the cause of the eruption, we may be putting the cart before the horse.

Book Reviews

REPORT OF THE SECOND LABORATORY CONFERENCE OF THE HEALTH ORGANIZATION OF THE LEAGUE OF NATIONS ON THE SERODIAGNOSIS OF SYPHILIS HELD AT COPENHAGEN, MAY 21 TO JUNE 4, 1928 (No. C. H. 726, 1929, 111, 3). Paper. Price, $1. Pp. 186. Boston: World Peace Foundation.

This second laboratory conference of the health organization of the League of Nations was called primarily for the purpose of conducting a comparative study of the numerous flocculation or precipitation tests for syphilis and especially of those elaborated since the first conference in 1923.

Thirty-seven medical men and women from nineteen countries attended the conference, at which 944 serums and 122 spinal fluids were tested by seven complement-fixation and seven precipitation, flocculation, turbidity or clotting tests. Dr. R. L. Kahn was the only American representative as Prof. John A. Kolmer, who was invited to be present, was unable to attend because of urgent duties at the University of Pennsylvania at the time of the conference.

Of the serums tested, 502 were derived from patients with known cases of syphilis in all stages of the disease both treated and untreated, 7 were derived from patients with no definite history of syphilis and 435 were from patients suffering from various other diseases. As expected there was considerable discrepancy in the results, the Kahn test as conducted by Dr. Kahn himself giving the best results of the seven different flocculation tests employed, which included those of Meinicke, Muller, Murata, Sachs-Georgi, the Sigma and Vernes.

Considerable discrepancy also resulted in the seven Bordet-Wassermann methods, embracing that of the Medical Research Council of Great Britain, deBlasi, Calmette and Massol, Jacobsthal, Blumenthal, Pavlovitch and McIntosh and Fildes, the first mentioned method having probably given the best results. One is struck, however, with the fact that considerable of the original Wassermann technic is still employed in Europe, including even the use of alcoholic extract of liver as antigen in some of the methods employed. Evidently, some European serologists are not aware of the work of American investigators or have ignored the great improvements in the technic of the latter resulting in greater sensitiveness and specificity of the complement-fixation reaction, and it is to be particularly regretted that because of their widely acknowledged superior sensitiveness and specificity the new Kolmer antigen and methods were not employed. It is very much hoped, therefore, that if a third conference is held on this subject in the future this new complement-fixation test will be included before any conclusions are drawn on the comparative merits of the various serum tests for syphilis.

Some of the resolutions of the conference are worthy of emphasis. For example, it desired "to emphasize the fact that, no less than the complement-fixation tests, the flocculation methods are, despite their apparent simplicity, extremely sensitive to the slightest differences in experimental conditions and subject to so many sources of error, in connection both with the execution of the test and the reading and interpretation of the results, that they must be placed only in the hands of specially trained serologists."

Also that it "recommends that, in order to secure the most reliable information to the clinician, at least two different serodiagnostic methods should be used." All will agree with the recommendation "that the serologist should check the accuracy of his tests by regular and very frequent reference to clinical data, in consultation with the clinician, whose assistance in supplying adequate information as to the history of syphilis and the clinical particulars of the case is of great value for the interpretation of the results." Only too frequently the precipitation tests are evaluated, not in relation to the clinical diagnoses by competent syphilologists, but merely to some modification of the Wassermann test without much regard for the sensitiveness and specificity of the latter.

DIFFERENTIALDIAGNOSTIK DER HAUTKRANKHEITEN. By DR. PAUL TACHAU. Price, 14 marks. Dresden: Theodor Steinkopff, 1929.

DIFFERENTIALDIAGNOSTIK DER GESCHLECHTSKRANKHEITEN. By DR. PAUL TACHAU. Price, 13 marks. Dresden: Theodor Steinkopff, 1929.

These two monographs, one on the differential diagnosis of diseases of the skin and the other on that of venereal diseases, represent the sort of thing that our German colleagues do so well and something that is needed greatly in the American medical literature. They summarize in convenient form the essential points in diagnosis in various diseases. Both are well done and are valuable publications.

SCABIES CRUSTOSA S. NORVEGICA BOECKII. By DR. O. KIESS. Price, 33 marks. Pp. 164. Leipzig: Leopold Voss, 1928.

This monograph on Norwegian scabies covers the subject of that interesting clinical condition and is a summary of useful information on leprosy.

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Place: Detroit. Time: 1930.

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